



To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

Volume 21 No. 1

January 1988

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NEW ADDRESS FOR THE EDITOR

The NPSO Editor, Jan Anderson, has moved to a new address.
Please make note of the change for future correspondence.
The new address is:
2584 NW Savier Street
Portland, OR 97210
(248-9242)

CHAPTER NEWS

Blue Mountain

- 19 Jan., Tues. Meeting, 7:30 pm. Blue Mountain Community College, Morrow Hall, Rm. 105. Bob Wilson will give a presentation on California wildflowers.
- 16 Feb., Tues. Meeting, 7:30 pm. EMCC, Morrow Hall, Rm. 105. Karl Urban will discuss the locations of R/S species in our area and we will plan field trips for the year.
- 15 Mar., Tues. Meeting - time and place to be determined; possible joint meeting with the LaGrande chapter.

Corvallis

- 11 Jan., Mon. Meeting, 7:30 pm. Cordley Hall, Rm. 2087, OSU. Nancy Fredricks will give a talk and slide show on "Tall Grass Prairie Remnants of Iowa", a glimpse of the inland sea of grasses and wildflowers that once covered the midwestern states.

Emerald

- 11 Jan., Mon. Meeting, 8 pm. Asasoon Community Center, 2700 Hilyard, Eugene. "Mexico's Yucatan Peninsula". This tropical region is changing rapidly with development of towns, resorts and lowland clearing. Botanist, Alan Curtis, will show slides of this area, particularly the vegetation along seacoasts, in forests and Mayan ruins.
- 8 Feb., Mon. Meeting, 8 pm. Asasoon Community Center. "Mysteries of the Monotropoideae Revisited". Dan Lucas from OSU will present colorful slides and the latest information about the myco-parasitic plants which are relatives of Rhododendrons and huckleberries.

High Desert

- 26 Jan., Tues. Meeting, 7:30 pm. Bend Senior Center, 1036 NE 5th Street, Bend.
- From January through April 1988, the chapter will hold its regular meeting at the above time and place on the 4th Tuesday of each month.

Mid Columbia

- 6 Jan., Wed. Meeting, 7:30 pm at the Mosier School will feature The Nature Conservancy's Metolius River Preserve; a multi-media program by Jerry Igo will relate his work experiences at the Metolius in monitoring 4 forest communities for tree composition, amount of forest litter, and downed woody material on the forest floor.

North Coast

- 7 Jan., Thur. Meeting, 7:00pm. in the meeting room of the State Office Building, 3600 3rd St., Tillamook.

Portland

- 12 Jan., Tues. Meeting, 7:00pm. First United Methodist Church, 1838 SW Jefferson St., Portland. Lois Kemp will give a program on "Hawaiian Flora - Why It Is There".
- 6 Feb., Sat. Workshop, 10:00am. First Methodist Church, Rm. 204. Russ Jolley will present a learning session on the Polygonaceae. For information, call Charlene at 284-3444.
- 13 Feb. No workshop, building will be closed for repairs.
- 20 Feb., Sat. Workshop, 10:00am, same place. John Davis will lead this study time. Please bring Moss books, hand lenses and be ready to take notes. A field trip for mosses will be in March.
- 27 Feb., Sat. Workshop, 10:00am, same place. Julie Kierstead will present a Citizen's Guide to the RBE Bill.
- 5 Mar., Sat. The Nature Conservancy representative will discuss some of the protected areas in the morning at 10:00am, then Katherine Snuffer will lead us on a short hike in a part of the Partridge Tract we did not have time to do last fall. Bring lunch.

Siskiyou

- 14 Jan., Thur. Meeting, 7:30pm. Rm. 171, Science Building, SOSC. Dave Wagner, Curator of the University of Oregon Herbarium, will talk on the plants of the Three Sisters Wilderness.
- 15 Jan., Fri. Science Seminar, 3:00pm. Rm. 118, Science Bldg., SOSC. Dave Wagner will give a presentation on "Breeding Systems of the Big Leaf Maple."

Willamette Valley

- 18 Jan., Mon. Meeting, 7:30pm. First United Methodist Church, corner of SE Church and State Streets, Salem. (Use Church St. entrance.) Janet Skirrow will present a slide program entitled PLANTS AND PLACES OF PATAGONIA. There will be a 6:30pm meeting of people who wish to help with the annual meeting.
- 22 Feb., Mon. Meeting, 7:30pm, same place. Carol Savonen, science writer, and Peter Zika, Eugene BLM Botanist, will present CLIMBING KILLIMANJARO.

Wm. Cusick

- - - - - For information, contact Rachel Sines (963-0674).

IT'S RENEWAL TIME!

HOYT ARBORETUM TOURS -- -- FOR FRIENDS AND NEIGHBORS

The staff and volunteers at Hoyt Arboretum would like to acquaint you with the Arboretum, how it has evolved, and what it could become. To do this they are offering special tours by reservation during the winter months. The tours will focus on the Arboretum's history, current projects, and future plans. This is an excellent way to learn more about Portland's largest botanical park, and to share your ideas about how it could be improved. To request a tour, call the Arboretum Visitor's Center at 228-8732.

ECOSYSTEM MANAGEMENT CONFERENCE -- JUNE 6 - 9

State University of New York will sponsor a conference on management of Rare Species and Significant Habitats, in Syracuse, NY. Information is available from Dr. D. J. Leopold; SUNY College of Environmental Science and Forestry; Syracuse, NY 13210-2784.

OREGON CHAPTER OF THE SIERRA CLUB SPECIAL
AWARD TO NATIVE PLANT SOCIETY OF OREGON

[illegible]

The Oregon Chapter of the Sierra Club presented the NPSO with a special award at their annual banquet in Portland, Oregon on December 5th. I was honored to be able to receive the award in behalf of the NPSO. The award is "in special recognition to the Native Plant Society of Oregon for leadership on the Oregon Endangered Species Act of 1987." The Sierra Club expressed appreciation to NPSO "for its sturdy determination to protect species diversity in our state".

It is a credit to us all that we came out a winner on our first try. I invite your help in nurturing and expanding this new program!

Esther Gruber McEvoy
State Legislative Chair

[illegible]

OPENHOUSE ON THE PLAN:

SALEM	JANUARY 19	CHUMAREE MOTEL	3-9 p.m.
ALBANY	JANUARY 20	TAKEENA LODGE	3-9 p.m.
RUGENE	JANUARY 21	SHILO INN	3-9 p.m.

From Portland

Harrison St.

Corvallis

From Eugene

30th St.

From I-5, Highway 34 enters Corvallis across the bridge onto Harrison St. Highway 20 intersects Harrison St. at the bottom of the bridge. Continue west on Harrison to 30th St. Turn left. After six blocks turn right on Jefferson Way. Park in the vicinity. Enter the main doors (carved wood, note flag pole). The large conference room is on the second floor above the main entrance. Bring your own lunch.

COLUMBIA RIVER GORGE COMMISSION

P.O. Box 100
North Bonneville, WA 98050
509-277-0000

November 16, 1987

Dr. Rhoda M. Love, Immediate Past President
Native Plant Society of Oregon
393 Pulvue Drive
Eugene, Oregon 97405

Dear Dr. Love:

Your suggestion for establishing a Columbia River Gorge Botanical Center in Bingen has been circulated to members of the Commission. The idea of establishing such a center, possibly in the former home of Wilhelm Nikolaus Suksdorf who contributed so much to the identification of native plants in this region, is most appealing.

The Commission is very supportive of efforts to acquaint visitors to the Columbia River Gorge National Scenic Area with the resources found here. The Commission, however, has no funds appropriated for construction of facilities. The Act (copy enclosed) does authorize federal funds for construction of one or more interpretative facilities on the Oregon side and one or more conference facilities on the Washington side. The Commission will choose the location of these facilities, but the monies will likely be spent by the federal government.

In our recreation assessment we do intend to identify locations within the Scenic Area for other public use facilities. Your proposal will surely be considered as this assessment proceeds. With these facilities also, the Commission has only a role of support. It has no funds for construction.

If you have any further thoughts on the botanical center, please call or write to Richard P. Benner, Executive Director for the Commission.

Sincerely,



Stuart Chapin
Commissioner


Washington Native Plant Society

9 November 1987

Dear Rhoda,

The Suksdorf home as a Botanical Museum sounds like a fine idea. I'm sure the WHPS will help gain support for the project. I'll pass on your letter to our President, Mark Egger. There must be a state agency in WA that deals with preservation of historical sites. Also the Wash. State Historical Society in Tacoma might help. Given this year as our Centennial Year, there might be additional support for the idea.

Yrs,



Art Kruckeberg
University of Washington

WELCOME NEW MEMBERS

CORVALLIS

Nancy Fredricks
George Sturtz
Laurel Lyn Welcher

EMERALD

Paul G. Edgecomb
Ruth Hawkey
Cheshire Mayrhoon
Susan Sater

HIGH DESERT

Paul Dewey
Greg & Suzanne Johannsen

PORTLAND

Wendy Batchelor
Mary Hayden
Richard B. Holoch
Claudia H. W. Lothrop
Jim & Marian Morton

SISKIYOU

Robert Burton
Marjorie L. Luther
Donna Seemann

WILLAMETTE VALLEY

Rose Owens Hayden

WILLIAM GUBICK

Karen Antell

SALEM AUDUBON SOCIETY OPENS AN OFFICE

Salem Audubon Society saw the need for a gathering place for people with an interest in birds and activities in conservation and natural history education, a place to serve the community as well as their membership of more than 700. In August the Audubon Center opened with volunteer staffing Tuesday through Saturday from 10am to 3pm. The Center is located upstairs in Salem's Mission Mill Village east of Willamette University across 12th Street, between State and Bellevue Streets. The street address is 1313 Mill St. SE and the phone number is 585-5699.

Visitors can stop by the center to find out about local parks and natural areas or to consult their natural history reference library. (They need book donations.) Schedules of field trips and programs are available. Field guides, bird feeders and bird seed are on sale. The group hopes to expand their hours eventually.

- Margie Willis

-- adapted from an article in the Newsletter of the Louisiana Native Plant Society (vol. 5, no. 1) by Charles and Tanya Allen.

Mistletoe, used as a Christmas decoration, never takes root in the ground. It is a parasite which grows on the trunks and branches of trees. It has oval leaves and tiny yellow blossoms, followed by white berries. It belongs to a genus of which there are about 20 species, all parasitic. It grows on both deciduous and evergreen trees.

Mistletoe has been used for many purposes throughout history in several parts of the world. Traditional medicinal uses (by ingesting) of mistletoe decoctions include cure or relief from epilepsy, cramps, ulcers, digestive distress, or hemorrhages; to prevent pregnancy or increase the chances of pregnancy both in humans and cows; and to prevent cancer. It was considered by some to be a remedy against all poisons. Other medicinal uses of mistletoe include the carrying of a sprig of mistletoe tied to a string around the neck or a knife whose handle is made of mistletoe wood. Both of these were reported to ward off epileptic attacks. (Most authors have reported Mistletoe to be poisonous, and it should not be experimented with.) Mistletoe has also been used to extinguish fires, as a preservative against wounds, to cause gardens to bear plentifully, and to bring about success in hunting. Rosearies in some areas of Europe used to be made from mistletoe wood. Mistletoe has also been used as a protection against sorcery and witchcraft such as placing a sprig of mistletoe on the threshold to ward off nightmares. Mistletoe wood has also been used to make divining rods to find gold.

One of the legends of mistletoe is found in an ancient story of Iceland from about 1220 A.D. This story is a retelling of an even older tale perhaps from the time of the Vikings. Balder was the favorite of the gods and the son of Odin

(father) and Frigg (mother). Balder started having threatening dreams and his mother made all things and beings take an oath not to harm Balder. But, she overlooked the insignificant mistletoe which grew west of Valhalla — or thought the mistletoe was too young to take an oath. The evil Loki observed this. The gods amused themselves by throwing spears and stones at Balder, which did not harm him because of the sworn oath. Balder had a blind brother named Hodur (or Hother) who was not able to join in the spear and stone throwing. But Loki taught Hodur how to throw and gave him a mistletoe spear. Hodur threw the mistletoe spear and killed his brother Balder.

Mistletoe's magic powers seem to come from its growing on other plants. It has been considered to be a gift from the divinity, a plant fallen from the sky. It is often considered to be the organism that bridges the gap or fills in the space between plants and animals or the living and the non-living. Mistletoe was used on New Year's to bridge the gap between the old year and the new. The "kissing under the mistletoe" tradition probably started in England not only to bridge the gap between the old and new years, but also between strangers, or the boss and the secretary. It is said to bring happiness, safety, and good fortune so long as it does not touch the ground.

The name mistletoe is thought to have originated from an old belief that the plant was produced from bird droppings. The old Anglo-Saxon word for dung was *mistle* and *tan* meant twig. This was altered to mistletoe with the passage of time. It was once thought that mistletoe seeds had to pass through birds before germination could occur. Recent experiments have shown that mistletoe seeds will germinate without passing through birds, but birds are responsible for distributing the seeds from tree to tree.



Phoradendron jungermannii

(reproduced from Hitchcock et al., *Flora of the Pacific Northwest*, with permission from the publisher)



Phoradendron bolleanum



Phoradendron flavescens

LETTER TO THE EDITOR:

Baker Cypress at Flounce Rock

To the Editor:

The December Bulletin of the NPSO had an article on Baker Cypress at Flounce Rock. You might be interested to know that I have a flourishing Baker Cypress growing in my yard in Vancouver, Washington -- a climate far removed from Steves Peak, from whence the seed came.

My longtime friend, since deceased, Lamar Toome, Jr., undertook to grow at least one example of each evergreen native to the State of Oregon on his property in Portland. He raised several healthy seedlings from seeds collected from a stand on Steves Peak in southwest Oregon, and generously gave me one.

I read up on the species in Bower's Cone Bearing Trees of the Pacific Coast and planted it on the top of a bank on the south side of my home, thinking it would behave and grow like it does in southwest Oregon. Mistake! I have already had to top it, and I envision further attempts to control its exuberance. Who knows, I may end up with an uncontrollable, ever expanding grove of Gymnocarpus bakeri, and will then be able to claim that I have the northernmost habitat. I hope Gordon Larus will not be disappointed.

Dudley F. Church
8614 Middle Way
Vancouver, Washington 98664

DIVERSITY ENDANGERED

"Diversity Endangered," an exhibition produced by the Smithsonian Institution, will be on view at Willamette Science and Technology Center (WISTEC) until Sunday February 26.

"Diversity Endangered" examines one of the most important issues of our century--the worldwide deterioration and destruction of our planet's biological diversity. 15 poster panels of color photographs, illustrations, and informative text encompass many world-wide phenomena including tropical rain forests, wetlands, the effects of deforestation and pollution, species diversity, and the interdependence of plants and animals. Visitors can learn about alternatives to destruction, new ways to preserve species, and how to get involved.

WISTEC will bring "Diversity Endangered" closer to home by displaying photographs and mounted specimens of extinct, endangered, and threatened species of Oregon. Take a closer look at the late passenger pigeon, the much discussed spotted owl, a live pitcher plant, a preserved kalmiopsis, and much more. Educational materials from organizations and agencies that focus on endangered species and land-use planning and management will also be on display.

A 10-minute video-tape amplifies the exhibits. Engaging photography presents the visitor with antelope, giraffes, and lions at play, and fish entangled in a life-giving food chain. This video is a "must-see" for anyone who is interested in wildlife.

"Diversity Endangered" was produced by the Smithsonian Institution Traveling Exhibition Service (SITES). Production of the exhibit was made possible by a grant from the National Science Foundation. The local sponsor is Sigma Xi, University of Oregon chapter.

WISTEC is located at 2300 Centennial Blvd. in Eugene, next to Autzen Stadium. Hours are 12-5 PM, Tuesday through Sunday. Admission is \$2 for adults, \$1 for college students and seniors, 75¢ for students 3-18 yrs.

FIELD SEMINARS AT PUGET SOUND

North Cascades Institute sponsors Winter Field Seminars:

Evergreen: Winter Plants of Puget Sound;
February 20-21.

Edible and Medicinal Plants of the Winter
Landscape: February 27-28.

Both occur at Deception Pass State Park. Tuition is \$69 for each, and includes accommodations at Sundquist Marine Lab.

North Cascades Institute, 2105 Highway 20,
Sedro Woolley, WA 98284, (206) 856-5700.

STATE COMMITTEE CHAIRS

NPSO Wildflower Posters & Pins Susan Kofahl
P.O. Box 151, Mosier, OR 97040; 478-3976

Notecards George Lewis
8230 SW Oakhurst Lane, Portland, OR 97225; 292-0415

T-Shirts Madeline Smith
1125 Jackson St., Eugene, OR 97403; 344-6478

ENVIRONMENTAL LAW CONFERENCE -- MARCH 4 - 6

University of Oregon Law School will sponsor the 6th Annual Western Public Interest Law Conference in Eugene March 4 through 6.

Michael McCloskey, National Chairman of the Sierra Club, will be keynote speaker. Other speakers will be Captain Paul Watson, founder of the Sea Shepherd Society; William Rodgers, law professor at University of Washington; and George Coggins, law professor at University of Kansas.

Workshop and seminar topics include Ocean and Coastal Law Issues, Forest Planning and Old-growth Protection, Pesticide and Herbicide Use on Public Lands, and many others.

Conference participants are lawyers in environmental law, law students, and citizen activists. Registration is \$30 for lawyers, free for others. Inquiries should be sent to Western Natural Resources Law Clinic; Law School; University of Oregon; Eugene, Oregon 97403; (503) 686-3823.

STATE OFFICERS

President Dan Lamm
2612 SE Lewis Ave., Corvallis, OR 97331
Vice President Marjorie Willis
1750 Swamp-Crest Rd., Salem, OR 97301; 591-6073
Secretary Charles Williams
2124 NE 34th Ave., Portland, OR 97218; 284-3444
Treasurer Borge Ellinger
6802 24th Street, S.W., OR 97201; 332-2525
Directors Dan Lamm, Julie Kierstead, Dick Fox,
Lester Hedgry, Hans Holman, Steve Gray
N/E Chair Jack Sidall
135 Steiner St., Lake Oswego, OR 97034; 636-0203
S/Swamp Chair Julie Kierstead
1135 S. 24th Street, Portland, OR 97214; 636-4112
Executive Chair Baker Hedgry
2200 SE Hillman Ave., Corvallis, OR 97331; 764-8995

CHAPTER PRESIDENTS

Alco Mountain (OR Oregon) Bruce Barone
725 SE 18th, Pendleton, OR 97601; 276-0517
Corvallis Thomas Kane
Bertherton, OR, Corvallis, OR 97331; 754-1956
Ewerd (Douglas area) Edith Baker
2411 Harris St., Eugene, OR 97405; 344-0342
High Desert (Douglas area) Joyce Bern
642 W. Broadway, Salem, OR 97301; 389-3579
Mid Columbia Keith Chamberlain
Box 151, Medford, OR 97504; 476-3554
North Coast Clara Paulfield
7305 Midway Creek Rd., OR 97141; 624-4262
Portland Gary Armstrong
2000 SE 8th St., Clackamas, OR 97015; 656-2791
Siskiyou Norma Hollis
361 1/2 St., Ashland, OR 97520; 432-0043
Willamette Valley (Salem area) Pat Hagenman
11325 Taylor Blvd., Denver, OR 97203; 764-6466
W. Coast (Lakeview area) Rachel Jones
304 S. Ave., LaGrange, OR 97603; 943-3074

MEMBERSHIP

Membership Chair Mary Falconer
1920 Engel Ave. NW, Salem, OR, 97304; 595-0419
Membership in the Native Plant Society of Oregon is open to all. Membership applications & changes of address (including old address & zip code) should be sent to the membership chair.

EDITOR

Editor Jan Anderson
2014 W. Center St., Portland, OR 97201; 463-6124

The NPSO Bulletin is published monthly. Copy is due by the 15th of the month & should be sent to the editor. News, articles, photos, drawings, & noncopyrighted material are welcomed.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typeset; therefore typed, camera-ready copy is most appreciated. But no submission will be rejected because it is not typed. Please proofread & check facts.

DEADLINE: 15th of each month

FORMAT: Copy should be typed in 8 1/2 inch wide columns, of any length. Author's name & chapter affiliation (or other organizational) are typed at the end of the article. There is no standard paragraph treatment; one of these is suggested:

* for long articles, double space between paragraphs, but do not indent the first word of the paragraph

* for short articles or short paragraphs, use double spacing; indents only, indent the first word of the paragraph (except)

Type your own headings, numbered, all caps. In case of special formats, e.g. plant keys, you are free to choose the layout.

UNITS: For each submission, provide

* title

* author—specify whether byline is desired

* for news items

* instructions as to whether item is to be used in entirety or accepted at editor's discretion

* source & date if item is not original

UNSUBMITTED: Please include species, but drawings, woodcuts, halftones, et al. We welcome small doodles as well as larger efforts. Please give source & date, if not original.

SCIENTIFIC NAMES should follow Pitelka & Brownell's "Flora of the Pacific Northwest" where possible. Use of both scientific & common names is encouraged. Genus & species names are underlined or italicized.

REUSE OF ORIGINALS: Manuscripts & illustrations will not be returned unless it is requested.

The Bulletin is published as a service to NPSO members & the public. Your suggestions & comments are always welcome.

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

CHAPTER (if known) _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

IS THIS A CHANGE OF ADDRESS? If so please write your OLD ADDRESS: _____

CITY _____ STATE _____ ZIP _____

* DUES include monthly news bulletin. Full membership runs from January through December. Quarter membership runs from September through December.

() NEW () QUARTER MEMBERSHIP (\$2.50) () RENEWAL

() Student \$ 7.50	() Sustaining \$ 25.00
() Regular 10.00	() Patron 100.00
() Family membership 15.00	() Life member 500.00

* CONTRIBUTIONS: Jean Davis Memorial Award Fund . . . \$ _____
Rare and Endangered Plant Fund . . . \$ _____

* All contributions to the Native Plant Society of Oregon, a non-profit organization, are tax deductible. Please make checks for dues & contributions payable to NATIVE PLANT SOCIETY OF OREGON. Send completed form & full remittance to: MARY FALCONER, NPSO MEMBERSHIP CHAIR, 1920 Engel Ave. NW, Salem, OR 97304.

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Portland, OR 97210

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Emerald

Important Notice to Field Trip Participants: Trips will take place rain or shine so proper dress and footwear are essential. Protection from sun, rain, and cold should be considered. Trip leaders are to be consulted prior to excursions about difficulty of hike, mileage and terrain. Bring water, food and hand lens with you.

8 Feb., Mon.

Meeting, 8 pm. Amazon Community Center, 2700 Hilyard, Eugene. "Mysteries of the Monotropideae Revisited." Dan Lucas from OSU, will present colorful slides and the latest information about the mycotrophic plants which are relatives to Rhododendrons and huckleberries.

12 Mar., Sat.

Field Trip to view unusual streamside lily, the Oregon Petal Adder's Tongue, Shuslay River between Laraine and Mapleton. Depart So. Eugene High School (SEHS) parking lot, corner of Patterson & 19th, at 10:00 am. Leader is rare plant expert Charlene Simpson (w: 686-3221; h: 465-1099).

14 Mar., Mon.

Meeting, 8 pm. Amazon Community Center. "Lane County's Rare and Endangered Plant Species."

30 April, Sat.

Field Trip. Take a census of a population of rare plants, Lomatium brachycarpum, in the Fern Ridge Area. Depart from SEHS at 10 am. RHN Botanist Peter Rikn leads. Participants should inform leader of their attendance; call 687-6681 days, 896-3853 eve. & weekends before 9 pm. Expect mud and water.

High Desert

23 Mar., Tues.

Meeting, 7:30 pm. Bend Senior Center, 1036 NE 5th Street, Bend. For more information call Joyce Bork (389-5579).

Mid Columbia

3 Feb., Wed.

7:30 pm. "What will the future hold for our nearest and dearest forest and its flora and fauna?" Meeting at the Mosier School will feature the "Proposed Forest Management Plan for the Mt. Hood National Forest" presented by Charles Parker, Ranger with the US Forest Service at Parkdale.

2 Mar., Wed.

7:30 pm. Meeting at the Mosier School will highlight the UNIQUE Ware Collection of Blaschka Glass Models of Plants; slides of the Harvard University exhibit will be presented by Mike and Nancy Fahey along with some of their own Northwest botanical favorites.

North Coast

4 Feb., Thur.

Meeting, 7:00 pm in the meeting room of the State Office Building, 3600 3rd St., Tillamook.

Portland

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Workshop, 10:00am. First Methodist Church, Rm. 204. Russ Jolley will present a learning session on the Polygumaceae. For information, call Charlene at 284-3444.

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The Nature Conservancy representative will discuss some of the protected areas in the morning at 10:00am, then Katherine Snuffer will lead us on a short hike in a part of the Partridge Tract we did not have time to do last fall. Bring lunch.

12 Mar., Sat.

Mosses field trip on the north side of the Columbia River led by John Davis (1-800-427-8905). More information in the next newsletter.

28-30 May
Memorial day wkend.

Float trip from Dale to Monument on the North Fork of the John Day River. Leader: Charlene Holmworth 284-3444.

2-4 July
July 4th wkend.

Orcas Island (San Juan Islands, Washington). Barb Fox has agreed to lead us and requests a postal card (11455 SE 35th, Milwaukie, OR 97222) from those interested in going so we can negotiate a van and accommodations. Please include your telephone number.

Siskiyou

11 Feb., Thur.

Meeting, 7:30 pm. Room 171, Science Building, SOGC. "Treking in Nepal". Nepal has many life zones from tropical to alpine. Mary Zuschlag from BLM recently completed a trip in Nepal, starting at 1200 ft. and climbing to 17,700 ft. She will present a slide show of her trek among the wild marigolds.

Willamette Valley

22 Feb., Mon.

Meeting, 7:30 pm. First United Methodist Church, corner of SE Church and State Streets, Salem. (Use the Church St. entrance.) Carol Savonen, science writer, and Peter Zike, Eugene EM Botanist, will present CLIMBING KILDEMAWANO, featuring the natural history of the thorn savanna, rainforest, alpine desert and glaciers on Africa's highest mountain. There will be a 6:30 pm meeting of the Silver Falls Wildflower Show Committee. The show will be on Mother's Day.

Wm. Cusick

For information, contact Rachel Sines (963-0674).

IT'S RENEWAL TIME!

1988 PLANT SHOW PLANNING SESSION - FEBRUARY 27

"Flowers in the Forest" is the name of this year's Portland Chapter Plant Show, May 14 and 15. All those interested in participating are invited to a planning meeting February 27 at the Methodist Church, immediately following the workshop. Bring a brown bag lunch, suggestions, and questions.

For more information, call Jeanne Hufstutter 244-3224, Florence Stelling 244-4122, or Louise Godfrey 223-4785.

ENDANGERED WILDFLOWERS CALENDAR

1988's Endangered Wildflowers Calendar features two Oregon species, *Mentzelia mollis* and *M. nagekete*, on its January page. The calendar is published by American Horticultural Society, Box 0105, Mt. Vernon, Virginia 22121.

NRDC POSTS JOB OPENINGS

Natural Resources Defense Council is seeking applicants for two jobs:

1. A full time consultant to assist in a new project to protect and preserve Hawaii's rich natural heritage, with an emphasis on tropical forests, wildlife, and rare species. The job is in Hawaii.
2. A grassroots assistant in tropical forest conservation, to help implement a project to conserve tropical forests in Puerto Rico, Virgin Islands, and Hawaii. The job is in Washington, DC, and emphasis will be on working with environmental organizations and federal agencies. Oral and written proficiency in Spanish is required.

Inquiries should be directed to NRDC at 90 New Montgomery St., San Francisco, CA 94105 (415-777-0220) for the first job, and 1350 New York Av., NW, Washington, DC 20005 (202-783-7800) for the second.

NATURE CONSERVANCY ASKS FOR HELPERS

The Nature Conservancy calls NPSO members' attention to the many volunteer opportunities during this spring and summer field season.

At Camassia in West Linn:

- Update plant and bird species lists.
- Record plant phenology.
- Lead field trips.
- Help control exotic species.

At Cascade Head:

- Help the resident intern monitor rare species, such as *Silene douglasii*, *Sidalcea hirtipes*, and *Geyeria hexagona* (silverspot butterfly).

At Union Peak, Sugarloaf Mountain, and Blue Lake Lookout:

- Develop plant species list for rock garden communities.
- Help monitor and map distributions of rare species, such as *Saxifraga hutchcockiana*, *Serapias pattersonii*, *Brugnera peregrina* var. *pergrina*, *Lewisia columbiana* var. *rupicola*, and *Gnaphalium fluitans*.

Other opportunities around the state are also available. For more information, or to volunteer, call Berta Youtie or Catherine Macdonald at the Oregon Field Office, 228-9561.

JULIE KIERSTEAD FEATURED IN AUDUBON ARTICLE

January 1988 Audubon magazine includes an article "Banking on Seeds to Avert Extinction" which describes the activities of seed banks in preserving rare and endangered species. The Berry Garden and Julie Kierstead are prominently featured. A photo of NPSO members at work on a planting project at Bonneville Dam is also included.

NPSO 1988 LIST OF CANDIDATES

The Nominating Committee offers the following final list of candidates for officer and Director at Large positions to the NPSO membership. A brief capsule resume is included with each candidate for your consideration. Election ballots will be included in the March Bulletin.

President

Dan Luoma, Corvallis Chapter. Dan is the current NPSO President and has agreed to serve a second term. He has served as president and vice president of the Corvallis chapter and is presently working towards his PhD at Oregon State University.

Vice President

Marjorie Willis, Willamette Valley Chapter. Marjorie is the current NPSO Vice President and has agreed to serve a second term. She is presently employed as the Natural Resource Planner for Oregon State Parks. In the past she has taught biology, led natural history tours to Central America, served on the Berry Botanic Garden Board and has done botanical field work for the BLM.

Treasurer

Daphne Stone, Emerald Chapter. Daphne has studied epiphyte succession on oak branches in the Willamette Valley and received her doctoral degree from the University of Oregon in 1986. She continues her research on lichens and shares her knowledge of natural history with children of Eugene.

Secretary

Cindy Hohenleitner, Willamette Valley Chapter. Cindy works as seasonal Botanist for the Salem District BLM. Previously, she conducted statewide plant disease surveys in Idaho for the USDA National Pest Detection Survey. While in Idaho she served as secretary for the Idaho Native Plant Society and was a member of the Boise State University Botanical Club.

Directors at Large

Nancy Fredricks, Corvallis Chapter. Nancy is currently working at Oregon State University on a project studying the systematics of annual Claytonias. She received her B.S. in 1980 from Iowa State and her M.S. in 1986 from Oregon State University. She is interested in ecology and systematics of *Calochortus*, rare plants, and flora of the Siskiyou Mountains.

Jerry Igo, Mid Columbia Chapter. Jerry is retired after working 27 years for United Air Lines with a B.S. in Psychology. In the past he taught at Portland Community College, was employed as Weed Control Officer for Hood River County, operated a school of Wilderness Skills and Ski Mountaineering and developed and conducted interpretive and entertainment programs for large audiences, radio, and television. He maintains an interest in the names and habits of both animals and plants.

Mary Mason, Portland Chapter. Mary is a retired librarian who has served as Vice President and Conservation Chair for the Portland Chapter. She maintains membership in the Audubon Society and Oregon Trails Club, is a board member of the Tyron Creek State Park and serves as a guide for park school tours.

Peter Zika, Emerald Chapter. Peter is currently employed as botanist for BLM's Eugene District. He has led field trips and workshops for the Portland and Salem Chapters over the last year. Since moving to Oregon in 1986 he has conducted rare and endangered species research for The Nature Conservancy in the Siskiyou, Willows, Willamette Valley, and Cascade Head. In addition, he has inventoried the flora of RNAs in Harney and Douglas Counties.

WELCOME NEW MEMBERS

CORVALLIS

Angie Rusicka
Barbara Toth

EMERALD

John Burks
Donna Carlson

HIGH DESERT

Stephen Reinhardt

MID-COLUMBIA

Bernice Jackson-Hoffman
Barbara Robinson

NORTH COAST

Sallie Jacobsen

PORTLAND

Allen Ambiasca
Barbara Ann Becker
Lisa Brown
Mr/Mrs. Robert Rye
Deborah Garman
Michael Fox
Anna Helm
Patricia Mahone
Anna Zeigler

WILLAMETTE VALLEY

Jake Hurlbert

WM. CUSICK

Bruce Rittenhouse

Very, very sad news came at Christmastime from the island of Kauai, Hawaii. Our good friend Leighton Ho drowned while skin diving on December 20.

Leighton was born in Hawaii, but loved the Pacific Northwest where he had lived and gone to school since the early 70's. Leighton adored the mountains, the lakes and streams of Oregon and tried hard to find a teaching job here when he completed his studies at the University of Oregon in 1985. Finally, finding nothing here, he returned to his home state of Hawaii and had been teaching on Kauai since 1986.

Leighton began his education in the Northwest at the University of Puget Sound. From there he went to Oregon State University where he worked with Bill Denison and received his BS in 1973. He did his graduate work at the University of Oregon with George Carroll. I met Leighton when he and I both assisted George Carroll with the large Systematic Botany class in the spring of '75. I loved working with Leighton. He was good-natured and funny, hard-working and ever curious about each and every plant and habitat we visited. Above all, Leighton loved to explore the out-of-the-way places, hidden canyons, waterfalls, caves and remote lakes. He delighted in looking for and finding the rare and unusual.

Leighton completed his PhD thesis entitled "Fungal Decomposition of Coniferous Needles in Subalpine Lakes" in 1980 and took a job in a research lab in New Mexico. Far away from his beloved steelhead and trout streams, Leighton yearned to return to Oregon, and did the next year, entering the teacher-training program at the U of O.

From 1983 through 1985 Leighton was the President of the Emerald Chapter of the Native Plant Society of Oregon. He brought an intense environmental awareness to our group, and was personally indefatigable in his efforts to save habitats and species. He worked closely with the McKenzie Flyfishers in their fight to save Waldo Lake, and with the ONRC in their efforts to conserve coastal ecosystems. One of his last projects in Lane County was to survey the endangered species, *Aster vialis*. He was instrumental in seeing that some specimens of this plant were introduced at the Mount Pisgah Arboretum. Leighton was also a wonderful writer, his witty articles and field trip descriptions in the NPSO Bulletin never failed to delight readers.

Leighton is survived by his mother and father and two brothers and a sister all of Honolulu, and by all his good friends in Oregon who will miss him very much.

Leighton's friends Mike and Monica and his girl friend Karen all from Eugene were spending the Christmas holiday with Leighton on Kauai when the accident happened. In the words of Mike and Monica: "On Sunday the 20th, the four of us spent the day adventuring around the northeast part of the island. We went swimming, body surfing, kayaking, kayak surfing, hiking, beach walking, and we ended our adventures by swimming and diving in what is known as the Ma'ema'ea cave. It was in the cave at the end of the day that Leighton

drowned. Scuba divers weren't able to recover his body until Monday morning, and he was cremated on Tuesday."

Leighton has already been dreadfully missed by his friends in Eugene since he went to Hawaii a year and a half ago. Every time a few NPSO people gather to discuss the saving or salvaging of rare plants, someone is heard to say, "Oh, how I wish Leighton were here." I think we all looked forward to a time when he would be back with us again.

It sounds shallow and trite and in no way makes up for the loss of this wonderful, young and vibrant person, but at least Leighton died doing the sorts of things he loved most, exploring nature in her most remote and secret places. Leighton, we will always remember you and be inspired by you.

Rhoda Love

EMERALD CHAPTER PERSUADES LANE COUNTY TO CANCEL FALL SPRAYING PROGRAM

Efforts by the Emerald Chapter of NPSO proved to be the deciding factor in Lane County's decision to cancel plans for a fall spraying.

Roadside spraying was scheduled to begin last fall after a five-year moratorium. Lane County had purchased 1000 gallons of Roundup and planned to spray during the drought and after a light frost had occurred (both conditions under which the use of Roundup is not recommended by the manufacturer). Public protest resulted in a hearing.

More than a year ago Emerald Chapter helped amend the County Charter to offer protection to rare, threatened, and endangered plants in the county. Recently they submitted an official list of plants currently endangered in the county. Presentation of the list during the public hearing and an effective dialogue by Daphne Stone providing information about the plant species and County Charter proved to be perhaps the most influential factors in the final decision to postpone spraying. The Northwest Coalition for Alternatives to Pesticides (NCAP) and members of Residents of Oregon Against Deadly Sprays (ROADS) provided information and support for the postponement.

Threatened plants that persist primarily along fence rows and roadways include meadow wild hollyhock, Nelson's checkermallow, thin-leaved peewee, peacock larkspur, and wayside aster.

Local efforts do pay off! Emerald Chapter is meeting at the end of January to update the County List and decide what further action to take.

— Gayle Goodrich, R/3 Chair
Emerald Chapter

Uniform Appearance? Yes.

Uniform Terms? Not Yet.

-- by Larry L. Morris
 Natural Resource Management Specialist trainee
 at Jean Lafitte National Historical Park and
 Preserve.

This article is reprinted from "Park Science --
 A Resource Management Bulletin" published by the
 National Park Service.

The National Park Service promotes a uniform
 appearance among its rangers throughout the National
 Park system. There even exists a special catalogue
 to ensure this uniform appearance among NPS per-
 sonnel. Uniform means "one image." To stray from
 this would result in confusion. Would that our use
 of descriptive terms for the status of certain
 species were similarly uniform. Service-wide.

This article is an outgrowth of a presentation I
 gave to the Pacific Mountain Parks Interpretation
 and Resource Management workshop at Sequoia NP in
 September 1986. I had become aware of general
 confusion over definitions of some often used
 descriptive terms. Interpreters and park managers
 need to make clear, first among themselves and then
 to the public, their definitions of what consti-
 tutes a threatened or endangered species, of what
 denotes rarity in a species, of what is a relict
 species, of the nature of a sensitive species,
 and of what qualifies as a native species or an
 alien species.

Interpretation of these species designators cannot
 be valid without agreed upon, recognized definitions.
 The tossing about of vaguely defined terms for
 species status does not have to be. Published
 definitions do exist and general use has strongly
 established others. What I would like to present
 are those published definitions of terms, along
 with clarifications and proposals of terms for which
 we have no written definitions.

Threatened and Endangered Species:

The NPS should be uniform in the definitions and use
 of the terms threatened and endangered as they pertain
 to species status, because we must use those
 definitions given in the Endangered Species Act.
 NPS Management Policies direct us to follow the
 US Fish and Wildlife Service's lead in this matter.
 An endangered species is one that is close to
 extinction throughout all or a significant part
 of its range. A threatened species is one likely
 to become endangered in the near future. Never use
 threatened or endangered to describe a species that
 is not officially listed as such. By not using these
 terms where they do not apply, we preserve the
 impact and weight of their true definitions.

Rare Species:

Rarity is a more difficult concept. What constitutes
 rarity in a species? Generally, park visitors per-
 ceive the word rare to mean "only a few left," but
 that view is too narrow. Species rarity can be
 categorized in three different ways:

1. Numerical Rarity -- A numerically rare species
 may be found over a wide area, but has few individuals
 in any given population. Examples are rare fur
 bearers such as wolverine and fisher. The California
 condor was a numerically rare species as well as an
 endangered species, now presumably totally absent
 in the wild. Spotted owl and red-cockaded wood-
 pecker also fit into this rarity category. They
 occupy a wide geographic range, but few individuals
 exist within that range.

2. Geographic Rarity -- A geographically rare
 species may be abundant in a local area, but is not
 found away from that small geographic area. Park
 visitors viewing a geographically rare plant, the
 population of which numbers in the thousands, have
 a difficult time understanding that the plant is
 rare. In a regional or global sense the species
 is rare, but it may leave the impression that it is
 a common plant in its area of local abundance.

The Sequoia Gooseberry, a prostrate plant, forms
 a fairly continuous ground cover in some of its
 populations, giving the appearance of a common,
 successful species; this causes dispute over its
 rarity. But when one considers that only eight
 populations of Sequoia Gooseberry are known in
 the world, seven of which are in the park, then the
 geographic rarity of the species becomes evident.

3. Rarity Because of Demand -- This simply means
 that the species cannot reproduce in the wild fast
 enough to meet the collection demand placed upon
 it. In this case, the species need not be numeri-
 cally or geographically rare. In most park units
 this kind of rarity does not apply because we regu-
 late collectors through a permitting system.
 However, theft for commercial market or over
 collection (demand) can make a species rare.

Relictual Species:

Webster's Dictionary defines relict as being
 "a persistent remnant of an otherwise extinct
 flora or fauna or kind of organism." Relictual
 species are often rare species, sometimes threat-
 ened or endangered, and almost always are of a
 local geographic occurrence tied to specific,
 fragile habitat. One example is the hemlock stands
 in Shenandoah NP, relicts of the last glacial pe-
 riod. Also, rare, endemic Hawaiian tropical rain
 forest birds can be considered relicts of an other-
 wise extinct fauna.

Sensitive Species:

The "catch all" term often used when one is unsure
 of the status of a species is "sensitive," now used
 so commonly that it has lost any true definition
 except in two instances. Staff members of the Air
 Quality Division in Denver are consistent in their
 use of sensitive species as being one that shows
 biological sensitivity to air pollution or acid
 precipitation. This is the most valid use of the
 term because if it is not dependent on rarity status
 for further definition.

The second definition of sensitive species comes from the US Forest Service in California, which views any species that cannot withstand more than routine visitor use or management activities as a sensitive species. This definition is too broad for NPS use. I would like to see the term sensitive species reserved and used only in the air pollution or acid precipitation context.

Native Species:

This term should cause no confusion. To quote from the Guide for Pesticide Use in the National Park System, native species are "species which presently occur, or once did occur prior to some human influence, in a given place, area, or region as the result of ecological processes that operate and have operated without significant direct or indirect, deliberate or accidental alteration by humans." Huh? Run that by me at thirty-three and one third.

Simply put, native species are those species that naturally occur in a given area.

Weed Species:

Weed is a term that belongs in the realm of IFM (Integrated Pest Management) jargon. It is not a species status term in the context of this article because a weed could be native or alien, rare or common. A weed is unwanted and considered a pest—hence its relegation along with the term "pest" to the realm of IFM.

Alien Species:

Alien species is a term that I hope will catch on Service-wide because it clearly states the species status, to park personnel and park visitors alike. The definition of the term has remarkably uniform application to plants, animals, people, or creatures from outer space. An alien is some organism that is foreign to the local ecosystem of concern, does not fit well into it, and is usually disruptive of the ecosystem until it gets its way by sheer numbers, taking over niches. (It also may die out completely as an unsuccessful introduction.) Alien species only occur in a new area by way of human assistance or feral populations. Examples of alien species in national parks are wild pigs, burros, water hyacinth, and European starlings—all alien species that should be eradicated from park units.

In common usage the terms "exotic" and "introduced" species often are used, especially in the area of IFM. NPS Common also uses "exotic" instead of "alien." These terms work well enough for park personnel, but when we refer to them as "exotic," these alien species are not perceived by the visiting public to be the truly disruptive, time consuming, costly, pestiferous organisms they tend to be.

When I was leading nature walks in Sequoia NP, I would make it a point to use variously the terms "exotic," "introduced," and "alien" for species we encountered along the trail, and note the expressions on the visitors' faces at the use of each of the terms. When I said, "These wild oats are an introduced species into the area and have substantially altered the foothill woodland ecosystem," very little response was noted. "Introduced" is

too kind a word; the people would almost shake hands with the oats. "See that European starling?" I would say. "It is an exotic species in the park and is competing with native bluebirds and woodpeckers for nest sites in the oaks." Their eyes would gaze into the distance, perceiving "exotic" as a good thing—palm trees, white sand beaches, sun and surf, and starlings flitting by... another chance lost for interpreting the food fight!

I walked along until the trail narrowed, the brush got thicker, and the canopy closed overhead. Then I used my last and best term. In a loud, surprised voice I gazed out, "Alien!" A short period of pandemonium generally ensued. Then I would gather them together if they had not run too far and we would discuss the lovely alien plant. The starling and the wildcats also remembered. Alien species is a clear term that cannot be misconstrued.

Conclusion:

We are effective at reaching our objectives only to the point at which we are no longer correctly perceived; after that comes misunderstanding. If we could agree on certain definitions for these terms and break our old habits on "exotic" and "introduced," we would better understand ourselves at meetings, conferences, and in our own literature.

And more importantly, we would be able to clearly define what we mean when we use such terms at public meetings, legal hearings, and the like. The NPS is often misunderstood in its attempts to manage wildlife, vegetation, or some other resource. We can alleviate some of the misunderstandings by being consistent in our terminology.

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Jean Davis Award: Deadline 4/1

NPSO will award a scholarship to a worthy student in an Oregon college, with his or her major study in plant systematics or plant ecology. The scholarship is in the amount of \$1,000, and is to be used toward the student's tuition within the following academic year. Deadline for applications is April 1; the award will be made by May 1.

Donations to the scholarship fund are tax deductible and are welcome at any time. All interest earned from the donations is apportioned out to as many scholarships as possible in the spring of each year, at \$1,000 each.

All communication regarding this fund should be addressed to Mary Falconer, Committee chairman, 1920 Engel Ave. NW, Salem, OR 97304.

* * Rules for Scholarship Awards * *

- 1) Scholarships are available to students in Oregon colleges, planning their major study in Plant systematics or ecology.
- 2) Scholarships are awarded in the amount of \$1,000 to worthy students who will complete at least 2 years of satisfactory college work by July 1 of the year of receipt of application, & are full time students. Graduate students may be eligible if they meet all qualifications except that of "full time student".
- 3) Awards are made in the following manner:
 - a) a certificate presented to the recipient
 - b) a check in the amount of the award, submitted to the school of choice, as set forth in rule 1, to be used toward tuition within the following academic year
- 4) If an award recipient fails to enroll, changes his or her major, or leaves the school before completing the period for which the award was granted, the full amount or unused part of the money shall be returned to the Jean Davis Memorial Scholarship Fund.
- 5) Applicants are required to submit:
 - a) in their own handwriting, a statement of academic & career intent
 - b) two letters of reference from persons able to judge to student's ability to successfully complete study in the area of plant systematics or plant ecology
- 6) All applications together with items listed in rule 5 must be received by the Chairman of the Jean Davis Memorial Fund Committee no later than April 1. The award will be made by May 1.
- 7) Scholarships are not granted to members or relatives of any person currently serving on the Scholarship Committee.

MEINKE TO HEAD OREGON'S T/E PLANT EFFORT

Bob Meinke, a recent recipient of NPSO's Jean Davis Memorial Scholarship, has been selected by the Oregon State Department of Agriculture to direct Oregon's newly initiated Threatened and Endangered Plant Program in Salem. Bob's position was established under provisions of Senate Bill 533, the Oregon Endangered Species Act.

Originally from the Southwest, Bob attended the University of Nevada and Humboldt State University before coming to Oregon in 1977 to work as the Bureau of Land Management botanist in Baker. He worked seasonally for BLM through 1983, with duty stations that included Troy, Ukiah, La Grande, Hermiston, and Huntington, as well as Baker. His responsibilities were to establish a T/E plant program for BLM in northeast Oregon and to work with the U. S. Forest Service in a similar capacity through an interagency agreement. One result of this arrangement was the establishment of the first co-operative herbarium by the two agencies. Northeast Oregon offered an array of botanizing environments from Hell's Canyon and the northern Great Basin, to the alpine slopes of the Blue and Wallowa Mountains.

When not employed by BLM, Bob worked under contract to the U. S. Fish and Wildlife Service. In 1982 he completed *Threatened & Endangered Vascular Plants of Oregon: an Illustrated Guide*, published by the USFWS as an information manual on the Oregon species that were Federal Candidates for listing as Threatened or Endangered.

He has also studied endangered species in the Willamette Valley at Finley, Ankeny, and Basket Slough National Wildlife Refuges. Most recently, Bob worked with the Environmental Protection Agency in Corvallis, as leader of a field team studying wetland ecosystems near Portland and urban areas in the Willamette Valley.

Currently, Bob is completing a Ph. D. degree in botany at Oregon State University, under the direction of Dr. Ken Chambers. He has also pursued the study of plant geography under Dr. Bob Frenkel. While at OSU, Bob has worked as a research assistant in the Herbarium, and taught for three years in the University's general botany and plant systematics programs.

His academic interests include taxonomy and floristics, as well as several aspects of reproductive ecology, including seed germination, pollination, and competition. He specializes in the genera *Mimulus*, *Lomatium*, and *Leptodactylon* (look for it in the Phlox family) and has published several papers on these plants. While continuing to research the distribution and size of T/E plant populations, Bob hopes to bring a new focus to rare plant work in Oregon by emphasizing studies designed to uncover biological factors that, when perturbed, promote a species' vulnerability to extinction. Bob begins his new job February 1st, and is looking forward to working with NPSO members and Oregon's botanical community as a whole.

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P.O. Box 151, Mosier, OR 97040; 478-3976

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MEMBERSHIP

Membership Chair Mary Falconer
1920 Legat Ave. NW, Salem, OR 97304 395-7479
Membership is the Native Plant Society of Oregon is open to all. Membership applications & change of address (including old address & zip code) should be sent to the membership chair.

PUBLICATION

Editor Dan Anderson
1204 SW Senior St., Portland, OR 97201 244-7042

The NPSO Bulletin is published quarterly. Copy is due by the 15th of the month & should be sent to the editor. News, articles, photos, drawings, & non-copyrighted materials are welcomed.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typeset; therefore typed, camera-ready copy is much appreciated. But no submission will be rejected because it is not typed. Please proofread & check facts.

CRITICAL: 10th of each month

PUNCT: Copy should be typed in 4 inch wide columns, of any length. Author's name & chapter affiliation (for other organizations) are typed at the end of the article. There is no standard paragraph treatment; one of these is suggested:

* for long articles, double space between paragraphs, but do not indent the first word of the paragraph

* for short articles or short paragraphs, when double spacing looks odd, indent the first word of the paragraph instead

Type your own headings, centered, all caps. In case of special format, e.g. plant keys, you are free to choose the layout.

CREDIT: For each submission, provide

* TELLS

* author—specify whether byline is desired for news items

* instructions as to whether item is to be used in entirety or excerpted at editor's discretion

* accuracy & date if item is not original

ILLUSTRATIONS: Black & white prints, color drawings, woodcuts, halftones, et al. We welcome small drawings as well as larger efforts. Please give source & date, if not original.

SCIENTIFIC NAMES should follow Hitchcock & Maguire's *Flora of Pacific Northwest* where possible. Use of both scientific & common names is encouraged. Genus & species names are underlined or italicized.

RETURN OF ORIGINALS: Manuscripts & illustrations MUST NOT be returned unless it is requested.

The Bulletin is published as a service to NPSO members & the public. Your suggestions & comments are always welcome.

2 2 6

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

CHAPTER (if known) _____

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IS THIS A CHANGE OF ADDRESS? If so please write your OLD ADDRESS: _____

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* **DUES** include monthly news bulletin. Full membership runs from January through December. Quarter membership runs from September through December.

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* **CONTRIBUTIONS:** Jean Davis Memorial Award Fund . . . \$ _____
Rare and Endangered Plant Fund . . . \$ _____

*All contributions to the Native Plant Society of Oregon, a non-profit organization, are tax deductible. Please make checks for dues & contributions payable to NATIVE PLANT SOCIETY OF OREGON. Send completed form & full remittance to: MARY FALCONER, NPSO MEMBERSHIP CHAIR, 1920 Engel Ave. NW, Salem, OR 97304.

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To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

Volume 21 No. 3

March 1988

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CHAPTER NEWS

** VOTE FOR STATE OFFICERS - BALLOT ENCLOSED **

* NEW NAME FOR THE EDITOR! *
* *
* The Bulletin Editor is now Jan Debak, owing to *
* her recent marriage. *
* *
* Her address is: 2584 N. W. Xavier Street *
* Portland, Oregon 97210 *
* *
* Her phone number is: 503-248-9242 *
* *****

IMPORTANT NOTICE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine so proper dress and footwear is essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage and terrain. You participate at your own risk. Bring water and lunch.

Blue Mountain

15 March, Tues.

Meeting, 7:30am. Blue Mountain Community College, Morrow Hall, Room 105. Dr. Bill Rickard, botanist with Estelle Northwest, will give a presentation on the Ecology Preserve on the Hanford Reservation.

Corvallis

14 March, Mon.

Meeting, 7:30pm. Room 4263, Cordley Hall, OSU. Wayne Rolfe will present a slideshow and talk on "Botanizing in the Red Buttes Wilderness Area".

26 March, Sat.

Field trip to McDowell Creek Park (east of Lebanon) to view riparian flora and waterfalls. Leader: Phil Hays (753-1065).

Emerald

12 March, Sat.

Field trip to view the unusual streamside Lily, the Oregon Petid Adder's Tongue, Siuslaw River between Lorane and Mapleton. Depart So. Eugene High School parking lot corner of Patterson & 19th at 10am. Leader: Charlene Simpson (w: 686-3221; h: 465-1059).

14 March, Mon.

Meeting, 8pm. Amazon Community Center, 2700 Hilgard St., Eugene. Botanist Charlene Simpson will show her colorful slides and share information about the ecology of "Lane County's Rare and Endangered Plant Species".

High Desert

- 29 March, Tues. Meeting, 7:30 pm. Bend Senior Center, 1036 NE 5th Street, Bend. For more information contact Joyce Bork (389-5579).
- 23 April, Sat. Field trip to The Island. This is a moderate 3 mile hike to a low elevation peninsula in the Cove Palisades State Park which has been essentially ungrazed. Meadow and sage steppe are predominate. The trail is rocky and steep in some areas and snakes have been seen. Leader: Stu Garrett (389-6981).

Mid Columbia

- 2 March, Wed. Meeting, 7:30 pm. Mosier School. Program will highlight the unique WARE Collection of Blaschka Glass Models of Plants. Mike and Nancy Fahy will present slides of the Harvard University exhibit along with some of their own northwest botanical favorites.
- 6 April, Wed. Meeting, 7:30pm. at Pietro's Pizza Place, 3320 W. 6th St., The Dalles, will have Cheryl McCaffrey, BLM Botanist from Burns, as our guest. There will be slides and an update of Eastern Oregon botanical issues. More specifics in next month's Bulletin.

North Coast

- 3 March, Thurs. Meeting, 7:00pm in the Library of Tillamook County Pioneer Museum. Election of officers.
- 13 March, Sun. Field trip to Westuca Spit. Meet at the Tillamook FUD parking lot at 1:45pm. For information contact Clarice Maxwell (842-7023).

Portland

- 5 March, Sat. Seminar by The Nature Conservancy at 10:00 am at the First United Methodist Church, 18th and S.W. Jefferson, Room 204. Following the workshop, Katherine Snouffer will lead us for a short hike on a part of the Partridge Tract not seen last fall. A short drive So. of Troutdale, carpooling from the Methodist Church parking lot. For more information call 246-6572 or 284-3444.
- 8 March, Tues. Meeting, 7:00pm. First United Methodist Church, 1838 SW. Jefferson St., Portland. Carol Savonen, science writer, and Peter Zika, BLM Botanist in Eugene, will present "Climbing Kilimanjaro", featuring the natural history of the thorn savanna, rainforest, alpine desert and glaciers on Africa's highest mountain.
- 12 March, Sat. Field trip. John Davis will lead a Mossee field trip on the North side of the Columbia River. Leave the K-Mart, 122nd and Sandy (south end of lot) at 8:30 am. Location will depend on the weather. Bring identification books, 10x lens, and clothing appropriate to the weather (boots). For more information contact John Davis (503-427-5871) or Charlene (284-3444).
- 19 March, Sat. George Lewis will lead a full day trip to Tillamook area, possibly the Trask River. Meet for carpooling at OMSI at 8:30 am. Bring lunch, water, boots, rain gear. For more information contact George (292-0415) or Charlene (284-3444).
- 26 March, Sat. Keith Chamberlain will show us flowers in the Mosier area. Meet for carpooling at K-Mart (south end of parking lot) on 122nd & Sandy at 8:30am or meet the leader at the Hood River Inn at 9:30am. This will be a drive with short hikes. For more information contact Keith (1-478-3314) or Charlene (284-3444).
- 2 April, Sat. Dave Debak will lead hikes on two trails, McGord Creek and Tanner Creek. Meet at the K-Mart on 122nd & Sandy at 8:30am. For more information contact Dave (246-9242) or Charlene (284-3444).
- 28-30 May
Memorial Day
Weekend Float trip on the North Fork of the John Day River from Dale to Monument. Call Charlene Holzwarth to reserve your space: 284-3444.

Siskiyou

- 10 March, Thurs. Meeting, 7:30pm, Room 171, Science Building, 808C. Richard Brock will present the Biology of Lomatium cereum.

Willamette Valley

21 March, Mon.

Meeting, 7:30pm. First United Methodist Church, corner of SE Church and State Streets. Salem (Use the Church St. entrance.) Bob Meinke, new director of the State Threatened and Endangered Plant Species Program and 2 time recipient of the NPSO Jean Davis Scholarship, will give a slide show on Native Plants of Eastern Oregon.

Wm. Cusick

For information, contact Rachel Sines (963-0674).

ANNUAL MEETING AT SILVER FALLS -- JUNE 24-26

NPSO's 1988 Annual Meeting will be held the fourth weekend of June at Silver Falls, the largest of Oregon's State Parks. It is 25 miles east of Salem on Highway 214.

Saturday, June 25, Wilbur Bluhm, an expert on the flora of Silver Falls, will lead a field trip in the park. NPSO's new state Conservation Chair, Ed Alverson, will lead a trip to little-known natural grassland remnants and vernal pools between Salem and Silverton.

At the Saturday night banquet, the keynote address will be on the implementation of California's endangered plant species law.

Sunday, June 26, at the State Board meeting, Bob Meinke, the new director of the Oregon Rare Plant Program with the Department of Agriculture, will give an informal report on Oregon's program.

We have reserved the Conference Center, which is situated in a valley surrounded by a fir-hemlock forest with some old growth. The Conference Center is beautiful and the cuisine, exquisite. We are working on reserving additional space for group camping, and hope to offer quality daycare.

Silver Falls State Park is geologically, as well as botanically, interesting. There are ten spectacular waterfalls, some with "caves" behind them, and lava casts of trees. The falls are accessible via a seven-mile loop trail system, with several shorter loops. Another trail system adjoins the Conference Center.

More information will appear in the April Bulletin.

-- Marjorie Willis
581-6073 (Salem)

BLM BOTANY WORK IN EUGENE

The Bureau of Land Management in Eugene is seeking a qualified botanist to survey forestlands for endangered, threatened and sensitive plants. This will be a botanical contract, awarded in early April for work between late April and early July, 1988.

If you like to hike in old Douglas-fir forests, and have a nose for finding rare plants, contact Peter Zika, District Botanist, at (503) 683-6495 in early March, or write him at: Bureau of Land Management, Eugene District Office, P. O. Box 10226, Eugene, Oregon 97440.

ENDANGERED SPECIES ACT RE-AUTHORIZATION

The Endangered Species Act is now awaiting floor action by the U. S. Senate.

On December 17, the House of Representatives passed HR 1467 by a 399-16 vote. The House bill included higher levels of funding and several strengthening amendments, including increased protection for plants on non-Federal lands and candidate species awaiting listing.

Letters or phone calls will be influential in the final decision made by the Senate. When contacting your Senators, the following points may be helpful:

Support the 5-year Re-authorization of the Endangered Species Act, as passed by the Senate Committee on Environment and Public Works -- with no amendments.

Ask your Senators to contact Senators Robert Byrd and Robert Dole, requesting early floor action on S675, the Endangered Species Act.

Ask your Senators to co-sponsor the re-authorization bill if they have not yet done so.

LEIGHTON HO MEMORIAL FUND ESTABLISHED

The NPSO Board, at its January meeting, established a special fund in memory of LEIGHTON HO, former Emerald Chapter President, who drowned in Hamlet December 20 (see NPSO Bulletin, Feb., '88, p. 13).

Monies have already been coming in to this memorial fund from Leighton's many friends. Approximately \$200 has been received thus far. When the fund grows to approximately \$400, it will be used for one of NPSO's annual summer research grants. The grant will be named the Leighton Ho Memorial NPSO Grant, and the recipient will receive the award in a brief ceremony at our Annual Meeting at Silver Falls, June 25.

If Bulletin readers wish to contribute to the Leighton Ho fund, please send your check, made out to NPSO, to:

Leighton Ho Fund
c/o Daphne Stone
Native Plant Society of Oregon
1934 Cleveland St.
Eugene, Oregon 97405

BOARD OF DIRECTORS MEETING HIGHLIGHTS

January 30, 1988

Reports were received from the Corvallis, Emerald, Portland, Siskiyou, and Willamette Chapters. Review of the National Forest Plans was a common concern. Mary's Peak has been the focus of much of the Corvallis Chapter's attention. Further commercial development at the summit has been averted, and the long delayed formal designation of the summit as a Scenic Botanical Area is imminent. Protection of a large stand of old-growth Douglas-fir in the Mary's Peak Watershed is now a concern. The Emerald Chapter participated in a process which lead to the delay of Lane County's roadside herbicide spraying plan. One of this year's research grants will be dedicated to the memory of Leighon Ho. Donations are being collected by the Emerald Chapter. Lane Community College will offer 1 hr. of college credit to students who participate in chapter field trips and programs this spring. Other chapters are hoping for positive results from this new offering. The Portland Chapter will assist with the labeling of plants in the Leach Garden in preparation for a benefit walk about for osteoporosis. A group of chapter members has been invited by the Mt. Hood National Forest to observe the timber sale process from start to finish. This is an effort by the Forest to demonstrate the steps taken towards responsible multiple use management of the forest's diverse resources. Russ Jolley's Draft Position Paper for Protection of Native Plants in the Columbia Gorge was well received. Wayne Rolfe has resigned as president of the Siskiyou Chapter. Frank Lang and Joan Seever are filling in. The Willamette Chapter will sponsor a Mother's Day wildflower show and the June 25-26 Annual Meeting at Silver Creek Falls State Park. Participation at the State Fair is still under study. The William Cusick Chapter was rumored to be reorganizing.

Membership Chair Mary Falconer reported 442 memberships paid to date. She asked for and received authorization to purchase a computer program to manage the membership list. A new subscription only category was created for organizations which wish to receive the Bulletin but do not want membership affiliation. Bulletin Editor Jan Anderson reminded people of the need for more botanical articles in the Bulletin. Rhoda Love agreed to be appointed as Proposal Chair in an effort to obtain funds towards the purchase of a Macintosh computer for publication of the Bulletin. Rhoda will also organize preparation of a new membership roster which will be available by the annual meeting. Dan Luoma pointed out that the Board voted at the last annual meeting that the membership list would not be sold or provided to others. No other group or organization is authorized to use our roster as a mailing list.

Conservation Chair Ed Alverson has jump into his new position with a big splash. He is trying to keep up with issues and meetings concerning: grazing on the Alvord Desert, reactivation of the Hells Canyon Preservation Council, the Oregon Rivers Initiative, Desert Conference X, Mary's Peak old-growth, post fire management in southwest Oregon, and Oregon State Parks management plans. The Oregon Rivers Initiative was discussed at length. The initiative was endorsed but with reservations because the ultimate outcome of the process could be less rather than more protection for Oregon's rivers, making this a risky proposition.

Jean Siddall, R/E Plant Project Chair, will have a committee meeting in early March to plan for the coming field season. Julie Kierstead will take over the Research Grants program from Barbara Fox, who resigned. Three \$400. grants will be awarded this year. Julie will also coordinate the effort to design new wildflower greeting cards. New safety procedures are being implemented for fieldtrips.

The Budget Committee reported an estimated income of \$8,250 and savings of \$6,900. The amount in savings was attributed to several beneficial factors: increased membership, increased donations and lower than anticipated expenses, particularly for the Bulletin. Funds expended for the passage of the Endangered Species Bill were covered by donations. Expenditures for 1988 are estimated at \$13,540. This amount greatly exceeds income but includes one time expenses meant to reduce the amount in savings. Barring unforeseen income, the 1989 budget will need to be greatly reduced in scope to balance and restore savings. January 30, 1988 CMH/DL

1988 NPSO BUDGET (January 1 - December 31)

Estimated Income:

Membership dues	\$6,500.
Posters	650.
R/E	400.
Interest	300.
Leighton Ho Memorial	200.
Notecards	200.
Sub-total	8,250.
Balance brought forward	6,900.
TOTAL INCOME	\$15,150.

Anticipated Expenses:

Bulletin (including \$3,000. for computer)	\$6,000.
Chapters share of dues @ 35%	2,275.
Research Grants (3 @ \$400.)	1,200.
Board and other committees	600.
Potential Legal Fees (Jackson-Frazier, \$300.; Walker Creek, \$250.)	550.
Grant to Berry Botanic Garden Seed Bank	495.
Conservation committee	450.
R/E committee	400.
Membership chair	300.
Legislative committee	250.
President	240.
Secretary	200.
Annual meeting-Banquet speaker	150.
ONRC annual contribution	100.
Fees and Taxes	80.
Nominating committee	50.
Treasurer	50.
Natural Areas Association	50.
Walker Creek Wetlands	50.
Desert Conference X	50.
Sub-total	13,540.
Balance Forwarded (savings)	1,610.
TOTAL EXPENSES	\$15,150.

State board members and committee chairs attending state board meetings are reimbursed for mileage over 100 miles per meeting (non-cumulative) @ 21¢/mile.

Adopted by the Board of Directors, January 30, 1988.

NATIONAL FOREST PLANS NEED INPUT

The forest planning process is now in full swing, with comment periods currently open for seven of Oregon's National Forests. Each Forest has prepared a detailed account of management issues and alternatives, in order to set objectives for multiple use management for the next 10 to 15 years.

Every acre of National Forest land will be allocated to a specific management designation. Each plan has a preferred alternative, which can tell you how your favorite places in the mountains will look in ten years from now if the Forest Service has their way. A number of additional alternatives are also provided, giving interested citizens the opportunity to express support for a variety of approaches spanning the entire spectrum, from strong protection to industrial forestry.

Members of NPSO can play a unique role in the forest planning process. Under multiple use management, each National Forest is required to protect and maintain the natural diversity that it harbors. This includes botanical values, such as sensitive plant species, representative examples of native plant communities, and interesting or unusual habitats. Yet, some forests have not even fully inventoried their botanical resources, and even when the significant areas are known, botanical values may not be given a high priority. Thus it is important for NPSO members to remind the National Forests of the significance of and public concern for botanical values.

Each National Forest has developed a set of planning documents, consisting of the Proposed Management Plan, a Draft Environmental Impact Statement, Appendices, Reviewer's Guide, and maps. These documents are available, at no cost, from each Forest Supervisor's office. In addition to supporting a particular management alternative, it is helpful to address specific issues. It is especially important to express support for areas proposed as Research Natural Areas and Special Interest Botanical Areas, as well as strong management guidelines for endangered, threatened, and sensitive plant species; and give reasons why you support these management issues.

If you know of a particular area that has botanical values that are not recognized in the plan, submit a detailed description of the area, explain why you think it should be preserved, and ask for a specific response to your comments. Your input can make a difference!

Many chapters of NPSO are preparing detailed responses to plans for local forests, and this provides another avenue for NPSO members to get involved. Contact your Chapter President or Conservation Officer if you would like to participate. And as state NPSO Conservation Chair I will be happy to field any queries concerning the Forest Planning process.

Xorophyton austini (Phantom Orchid)

Ed Alverson
Conservation Chair

Drawing by Susan G. Baker,
Siskiyou Chapter.

The following National Forests currently have Plans that are open for public comment. Write to these addresses for further information, or to submit your prepared response. Comment deadlines are listed as they currently stand.

Fremont National Forest
P.O. Box 551
Lakeview, OR 97630
comments due by 15 March

Umatilla National Forest
2517 S.W. Hailey Avenue
Pendleton, OR 97601
comments due by 28 March

Winema National Forest
P.O. Box 1390
Klamath Falls, OR 97601
comments due by 15 April

Rogue River National Forest
P.O. Box 520
Medford, OR 97501
comments due by 2 May

Umpqua National Forest
P.O. Box 1008
Roseburg, OR 97470
comments due by 16 May

Willamette National Forest
P.O. Box 10607
Eugene, OR 97440
comments due by 16 May

Mt. Hood National Forest
2955 NW Division Street
Gresham, OR 97030
comments due by 31 May

Conservation Alert

MT. HOOD DRAFT FOREST PLAN PROPOSES LOGGING IN COLUMBIA GORGE NATIONAL SCENIC AREA

The Mt. Hood National Forest recently released its draft Forest Plan, to cover the next 10-15 years. Unfortunately, the alternative preferred by the Forest Service would not be good for the new National Scenic Area. While the part of the Gorge directly facing the Columbia River would be kept in Special Interest category, with no timber harvest, an important area near Larch Mountain would have its current Special Interest protection removed, allowing logging for the first time.

Over 50 years ago, in 1937, the area seen from the viewpoint at Larch Mtn was set aside by the Secretary of Agriculture as the Columbia Gorge Park Division. This protection was confirmed by the Eagle Creek Plan of 1975, and in 1986 the area was included in the Columbia River Gorge National Scenic Area. Last year, the interim guidelines for the National Scenic Area identified Larch Mtn as a "Key Viewing Area", i.e., "an area from which large numbers of people view the National Scenic Area portions of the Gorge". Despite this long history of protection and public concern, however, the Mt. Hood National Forest now proposes so-called "Viewshed Management" (with logging) for the area below the Larch Mtn Viewpoint, usually called the Multnomah Basin. For the area which slopes up to Nesmith Point, also viewed from Larch Mtn, the proposal calls for Intensive Timber Management!!

Not only do the Multnomah Basin and Nesmith Point areas have great scenic value as seen from Larch Mtn, but they also have precious natural and recreational values which would be damaged or destroyed by logging:

Old Growth Forest - This is scarce in the Columbia Gorge, and by far the largest block of old growth forest in the Gorge, some 2000 acres, is in the Multnomah Basin. Here there are plenty of big firs, hemlocks and cedars, tall snags (homes for woodpeckers and other wildlife), spotted owls (confirmed by Forest Service wildlife biologists), and many deep woods plants, such as Pinesap, Spotted Coral Root, Mertens' Coral Root, Pyrolas, Coolwort, etc. This is the closest old growth forest to the Portland-Vancouver Area and is traversed by 6 excellent trails. It would be a sad day if the chainsaws come to this forest.

Wetlands - The basins near the headwaters of Multnomah, Oneonta, Horsetail, and McCord creeks contain some splendid and pristine marshes. In the area which the Forest Service now proposes for logging, there are 13 marshes ranging from 3 to 13 acres in size, and many other smaller ones. One of the marshes is in plain view from the viewpoint at Larch Mtn. In addition, there are at least a dozen tiny

ponds, many of them marsh-girded. These precious wetlands are important for a variety of wildlife, and for native plants such as Grass-of-Parnassus, Staff Gentian, Marsh Violet, Tall Shooting Star, Bog-orchids, and others.

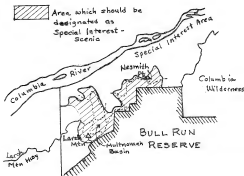
Trails - The Multnomah Basin/Nesmith Point area is accessible from trailheads along the Larch Mtn Highway, less than 40 miles from downtown Portland. A network of 10 easy trails covers the area, among them the popular Larch Mtn Trail.

Finally, it was not just by coincidence that this area, with its remarkable esthetic, natural, and recreational features, was included by Congress in the National Scenic Area. The idea that roads or logging could occur here without damaging the old growth forest, the many wetlands, the trail network, or the scenery, simply defies common sense.

Please write the Forest Service. Ask that the long history of protection for the Larch Mountain/Nesmith Point area be continued in the new Forest Plan by designation as a Special Interest Area (with no timber harvest). Make the point that logging would be inconsistent with the goals of the National Scenic Area, especially where so many important natural and esthetic values are involved, and so close to a large metropolitan area.

Write: David G. Mohla, Forest Supervisor
Mt. Hood National Forest
2955 N.W. Division St.
Gresham, OR 97030

Deadline for comments is April 15, 1988



**PRELIMINARY ANNOUNCEMENT: CONFERENCE ON
THE FUTURE OF STUDIES ON ENDANGERED SPECIES
OF PLANTS IN THE PACIFIC NORTHWEST.**

**AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF
SCIENCE, PACIFIC DIVISION**

**JUNE 19, 1988 -- OREGON STATE UNIVERSITY--
CORVALLIS--OREGON**

AS PART OF THE PROGRAM OF THE ANNUAL MEETINGS OF THE AAAS, PACIFIC DIVISION, TO BE HELD ON THE CAMPUS OF OREGON STATE UNIVERSITY, THERE WILL BE A HALF-DAY CONFERENCE DEALING WITH THE FUTURE OF STUDIES ON THE ENDANGERED AND THREATENED PLANT SPECIES OF THE NORTHWEST REGION. ORGANIZERS OF THE CONFERENCE ARE DR. KENTON L. CHAMBERS AND MR. ROBERT MEINKE. A PROGRAM OF TALKS BY INVITED SPEAKERS, TOGETHER WITH ROUNDTABLE DISCUSSIONS IS PLANNED, WHICH SHOULD BE OF INTEREST TO MANY PERSONS WHO ARE INVOLVED IN THE STATE AND REGIONAL EFFORTS ON BEHALF OF ENDANGERED PLANTS.

THIS PRELIMINARY ANNOUNCEMENT IS INTENDED TO CALL THE MEETING TO THE ATTENTION OF THE MEMBERSHIP OF THE NATIVE PLANT SOCIETY OF OREGON. ANYONE WISHING TO ATTEND THE CONFERENCE CAN GET FURTHER INFORMATION BY WRITING TO DR. CHAMBERS, C/O DEPARTMENT OF BOTANY, OSU, CORVALLIS, OR 97331. SUGGESTIONS CONCERNING THE PROGRAM ARE WELCOME, AS WELL. PERSONS WHO ATTEND THE CONFERENCE AND WHO REGISTER FOR THE AAAS MEETINGS (FOR THE SET FEE OF \$32) MAY TAKE PART IN ALL THE ACTIVITIES OF THE MEETINGS, INCLUDING SCIENTIFIC SYMPOSIA, SESSIONS OF CONTRIBUTED PAPERS, FIELD TRIPS (TRANSPORTATION COSTS SEPARATE), AND VARIOUS SPECIAL EVENTS DURING THE PERIOD OF JUNE 18TH - JUNE 22ND.

DEATH VALLEY AND MOJAVE DESERT TRIP - MARCH 18-27

Malheur Field Station sponsors a spring desert course (2 credits) and trip for amateur botanists, professional botanists and biologists, students, and people who just love Death Valley. Because winter rains have been just right, this promises to be an excellent year for spring wildflowers.

Instructor is Dr. Linda Ann Vorobik. The class is limited to 24 students, and enrollment closes March 10. The \$470 fee includes tuition, room, board, travel in the field. A \$70 deposit is required at application time.

For additional information, contact:

Lucile A. Housley, Director
Malheur Field Station
HC 72 Box 260
Princeton, OR 97721
503-472-2629

MT. HOOD NATIONAL FOREST PLAN RELEASED

The public comment period for the Mt. Hood National Forest plan closes April 15.

The timber industry is very concerned about this plan. The preferred alternative, E, would result in an overall reduction in harvesting through the next 15 to 20 years. All of us have a responsibility to provide a balanced input in view of the strong lobbying effort the loggers will muster.

NPSO members who have reviewed the plan have found little or no reference to native plant and mushroom foraging. Foraging activity, growing constantly, raises concerns which must be dealt with in a comprehensive plan for the forest's next 10 to 15 years.

Send your comments, or request the information package from:

Mt. Hood National Forest - Planning
2955 NW Division St.
Gresham, OR 97030 503-666-0700

**DISCOVER
LOCAL FLORA**

GS 199 - 1 CREDIT

OPEN TO EVERYONE INTERESTED
IN THE WILD PLANTS AND ORNITHO
HISTORY OF LANE COUNTY.



TOURS: DISTANCE, AVAIL & V OF 0 MARGINAL

TALKS: WILDFLOWER ENTHUSIASTS SHARE THEIR EXPERIENCE



IDENTIFY: SIMPLE WILDFLOWER IDENTIFICATION

MONDAYS, 7-8 PM*
HOME REFUNDARY FIELD TRIPS WILL BE OFFERED

INSTRUCTOR: GAIL BAKER

EMERALD CHAPTER OFFERS WILDFLOWER PROGRAM

NPSO Emerald Chapter is offering a one-credit class, "Discover Local Flora", in cooperation with Lane Community College this spring. The course is based on the Chapter's regular monthly meetings and field trips, with additional classroom work. The objectives are to increase local botanical education, and promote NPSO and NPSO membership. The course focuses on the variety of botanical opportunities available within 15 miles of Lane Community College.

THROW-AWAY MALES AND MATING TYPES IN THE BIGLEAF MAPLE

by David Wagner

Most flowering plants have a uniform arrangement inside the flower: a pistil containing ovules that develop into seeds in the center of the flower and a ring of stamens that produce pollen around the pistil. The typical situation is for all flowers on a plant to be the same. Sometimes a plant will have special arrangements, e. g., to provide for better exchange of pollen from plant to plant or to provide an excess of pollen to insure all the ovules are fertilized and will develop into seeds. Such special arrangements improve the chances for reproductive success of that particular species.

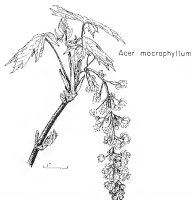
The bigleaf maple (*Acer macrophyllum*), prominent in western Oregon, is a plant that has several "special arrangements." As you know, this tree has long clusters of yellowish flowers in April and May. If you look closely at the flowers, you will find that only a few of them are complete, that is, have both female and male parts. The complete flowers have pistils in the center with a forked stigma — the stigma is the part that receives the pollen — and there is a ring of ten stamens around the pistil. Other maple flowers, however, do not have a pistil, but only a vestigial bump indicating an aborted pistil. They have only stamens, and so are called male flowers. The complete flowers with both pistils and stamens are called bisexual.

A little more investigation will show you that male and bisexual flowers are not evenly distributed in maple inflorescences. On many of the trees, the male flowers are mostly at the tip of the inflorescence, with the bisexual flowers concentrated at the base. Since the inflorescences are pendent, this means the male flowers are mostly below the bisexual. Some trees have some of their inflorescences with male flowers only. This leads to interesting consequences later in the season.

When the bigleaf maples are in the middle of pollination, bees and other pollinators are busily sipping nectar and doing their duty transporting pollen from one flower to another. When they visit the male flowers they pick up pollen; when visiting bisexual flowers they deposit pollen on the stigmas. After pollination, the petals will wither and the pistils will start growing long wings to produce the winged fruits (samaras) we all enjoy. Male flowers, of course, won't produce seeds and are no longer needed.

At this point, an amazing thing happens: an abscission (cutting-off) zone develops in the central axis of the inflorescence. (The development of an abscission zone is the same mechanism maples and other deciduous trees use to drop their leaves in the fall.) Here, the abscission zone occurs just beyond the last of the bisexual flowers. The end of the inflorescence, with male-only flowers, is cut off and dropped from the tree. Watch for this! Some time in late April or early May, many of the bigleaf maples will have a litter of the tips of inflorescences beneath them. These are the "throw-away" male flowers, dropped from the tree because they are no longer of any use and the tree will not need to spend any more energy maintaining them. So far as I am aware, this is the only plant in the world with throw-away male flowers AT THE TIP OF AN INFLORESCENCE that has bisexual flowers on it. On other trees, male-only inflorescences are dropped in the same way.

This is an interesting enough tale already, but it is only half of the story! I noticed, soon after recognizing the throw-away male phenomenon, that only some of the trees seemed to be doing it. What I and my students have found is that there are two types of bigleaf maples which we have named "Type I" and "Type II." Only the Type I trees have the throw-away



Drawing by Ramona Hammerly in Northwest Trees.

males at the tips of the inflorescences. Type II trees have some inflorescences that are male-only and some mixed inflorescences. The two types are part of a system to insure that pollen moves from tree to tree for cross-pollination.

As mentioned above, extra male flowers are developed to produce an excess of pollen. However, that in itself does not prevent self-pollination. A different mechanism comes into play here. The Type I and Type II trees represent two mating types with overlapping flowering times. At the beginning of the maple flowering season, the Type I trees stick out the stigmas of their bisexual flowers and are ready to receive pollen. Their male flowers are not yet open at this time. At the same time the Type II trees are shedding pollen (from their all-male inflorescences and the male flowers in their mixed inflorescences), and their bisexual flowers are not open. Midway through the maple flowering season, the two mating types reverse roles with the Type I trees shedding pollen and the Type II trees sticking out their receptive stigmas. Once all the pollen has been shed, Type I trees drop the male end of the inflorescence and Type II trees drop male-only inflorescences and individual male flowers.

All of this seems deliciously complicated to the student of breeding systems in flowering plants. I have to confess that our observations indicate the situation is even more complicated than I have described here. The essential outline for the highest maple has been presented, however. Actually, in the light of the ideals of reproduction:

First - trees need to be sure that there is enough pollen to fertilize all the pistils. This is achieved by having most (over 80%) of the flowers being male.

Second - trees want to be sure that pollen is moved from tree to tree. This is nicely done by dividing up sex roles for the first half of the flowering season and then switching roles in the second half. Type I trees are being pollinated during the first half of the season and Type II trees in the second half. A special benefit of this role-switching is that all trees will produce seeds, a distinct advantage when compared to our cottonwoods and willows which insure that pollen moves from tree to tree by having separate male and female trees but suffering from the result that only half the trees of a population can produce seeds.

Third - trees are best off when they spend a minimal amount of energy on structures which are no longer necessary, as here, male flowers past pollen production. The bigleaf maple handles this by having throw-away male inflorescence tips (Type I trees) or early dropped male-only inflorescences (Type II trees).

I believe there is no other plant in the world that has a more efficient and effective breeding system than our humble bigleaf maple. I contend that there are few organisms that have a more elegant system. I share all this with you because it is all easily verified by casual observation. All you have to do is take weekly walks during the months of April and May, and peer closely into the flower clusters of the bigleaf maple. For the benefit of readers in the Eugene-Springfield area, I will make a point of marking Type I and Type II trees in the Mount Pisgah Arboretum along the Nature Trail loop and the Venter Garden trails.

From Tree Time, January-February, 1988, the newsletter of the Mount Pisgah Arboretum, Eugene-Springfield, Oregon. Used with permission of the editor.

A NEW CASCADE WILDFLOWER BOOK

Timber Press (9999 SW Wilshire, Portland, OR 97225) has just released "Wildflowers of the Western Cascades" by Robert A. Ross and Henrietta L. Chambers. The authors are both members of the biology faculty at Linn-Benton Community College in Albany. Books should be available at local bookstores by March 1st. The book has a softcover, 182 color plates, 102 line drawings and descriptions of 42 families and 272 species. There is a map of the Iron Mountain trail system and descriptions of 18 habitats and some of the plants commonly found there. The book sells for \$19.95. If ordered from Timber Press, include \$3.00 for postage and handling.

Henrietta Chambers
Bob Ross
Corvallis Chapter

THE OTHER 'THE BOOK' IS DUE SHORTLY

Terrestrial Vegetation of California; New, Expanded Edition 1988, edited by Michael G. Barbour and Jack Major, will be off press no later than January 1988. This 1036 page revision includes updates by chapter and new literature citations.

The California Native Plant Society clothbound edition is limited to 500 copies and is priced at \$50 (half the cost of the Wiley edition at the time it went out of print).

Order from CNPS, 909 Twelfth St., Suite 116, Sacramento, CA 95814. Add \$1.75 for shipping for the first copy, and \$.75 per copy after the first.

WELCOME NEW MEMBERS

BLUE MOUNTAIN

David Powell
Julie Van't Hul

CORVALLIS

Bruce McCune
John Orlovsky

EUGENE

Jack & Betty Gaggola
Derry Watkins

MID COLUMBIA

Robert Bevasqua

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Susan Knotts

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Claude & Joanne Derr
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The Grotto
Richard Luce
Pat Mahone
Richard Marx
Susan Peter
Dorothy Sands
Diana Seeck
Judy Shaw
Dennis Voigt
Nancy Wilson
Tom & Adelaide Zivic

SISKIYOU

Darren Borgias
Franklin Cook

WILLAMETTE VALLEY

Jean Novotny



The Hells Canyon Preservation Council, which was instrumental in obtaining National Recreation Area status for this diverse and scenic part of NE Oregon and adjacent Idaho, is coming back to life. This is in response to a growing perception among conservationists that management of the NRA is not being conducted in accordance with the provisions of the legislation that created the NRA.

The major problem at present seems to be with timber sales in non-wilderness portions of the NRA, which are allowed only when they don't conflict with the scenic, recreational, and natural values for which the NRA was created. However, conservationists have documented a number of instances in which these values have been damaged as a result of logging, and associated roadbuilding and quarrying.

NPSO should designate a member as a liaison with the Hells Canyon Preservation Council. Ideally it would be someone who lives in NE Oregon or has a strong interest in the area. The role I envision this person playing is to conduct some background research into the sensitive plants and natural plant communities of the NRA, and perhaps also organize or conduct field surveys of critical areas. The idea is to gather sufficient knowledge so that NPSO can provide informed comments in response to specific Forest Service management actions, such as timber sales.

Please feel free to contact me if you have any interest in participating in this effort, or if you have further questions.

Ed Alverson
Conservation Chair

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MORE KNAWEKED PULLING!

The Nature Conservancy has set Saturday June 4 for the next Knapweed pull on the Tom McCall Preserve at Rowena. The project is a joint venture of the Mid-Columbia Chapter of NPSO and The Nature Conservancy. Details will be in future issues of the Bulletin.

The Mid-Columbia Chapter has been contributing help to the McCall Preserve in the form of funds for construction and installation of a bulletin board on the site, and volunteers to lead hikes there Sundays this Spring.

DESERT CONFERENCE TO FOCUS ON WATER

"Water in the Desert" is the theme of the 10th annual desert conference at Malheur Field Station April 15-17. The keynote speaker will be Dr. Bernard Shanks, author of This Land is Your Land. The program will feature speakers and field trips on riparian and marsh ecosystems, water law, wildlife refuges, watershed enhancement projects, and whitewater recreation.

More information is available from Linda Craig, at 503-224-6240 or Audubon Society of Portland at 503-292-6588.

ENVIRONMENTAL BULLETIN BOARD IN OPERATION

An electronic bulletin board system dedicated to environmental conservation is now operating. Use of the system is free. The phone number to call is 503-223-5240.

Members with personal computers may wish to use this service. For further information, call Bob Nisbet at 221-3422 or 274-1086.

STATE COMMITTEE CHAIRS

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Notecards George Lewis
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Legislative Chair Gordon Hobbs
1290 SW Alameda, Corvallis, OR 97331; 734-0883

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Corvallis Thomas Kaye
Jewettville, OR, Corvallis, OR 97331; 734-4000
Easwell (Douglas area) Bill Baker
3624 Maple St., Eugene, OR 97405; 344-0712
High Desert (Good area) Joyce Bore
640 SW Broadway, Bend, OR 97701; 363-2255
Mid Columbia Keith Chamberlain
1001 W. Main, Corvallis, OR 97331; 478-2114
North Coast Greta Fairfield
1905 Vandenberg Road NW, Corvallis, OR 97331; 324-1340
Portland Mark Menzies
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Starkton Frank Lark
121 Taylor St., Astoria, OR 97103; 424-2223
Willamette Valley (Good area) Ted Rogers-McDon
12323 Jackson Road, Astoria, OR 97103; 709-1659
W. Coast (Laurens area) Rachel Blane
262 E. 1st Ave., Astoria, OR 97103; 709-1659

MEMBERSHIP

Membership Chair Mary Falconer
1920 Engel Ave. NW, Salem, OR 97304; 585-4141
Membership in the Native Plant Society of Oregon is open
to all. Membership applications & changes of address
(including old address & zip code) should be sent to the
membership chair.

DELIVERIES

Editor Joe Davis
2524 SE 14th Ave., Portland, OR 97212

The NPSO Bulletin is published monthly. Copy is due by
the 15th of the month & should be sent to the editor.
News, articles, photos, drawings, & non-magical items
are welcomed.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typeset; therefore typed,
camera-ready copy is much appreciated. But
no submission will be rejected because it is
not typed. Please proofread & check facts.

RECAPITULATE 10% of each month
FORMAT Copy should be typed in 4th inch wide
columns, of any length. Author's name & chapter
affiliation (or other organization) are
typed at the end of the article. There is no
standard paragraph treatment; one of these
is suggested:

- * for long articles, double space between
paragraphs, but do not indent the first
word of the paragraph
- * for short articles or short paragraphs,
when double spacing looks odd, indent
the first word of the paragraph instead
Type your own headline, centered, all caps.
In case of special format, e.g. plant keys,
you are free to choose the layout.

CONVENT For each submission, provide

- * title
- * author—specify whether byline is desired
for each item
- * instructions as to whether item is to be
used in entirety or accepted at editor's
discretion
- * source & date if item is not original

ILLUSTRATIONS black & white prints, ink
drawings, woodcuts, halftones, et al. Be
welcome small drawings or well as larger
efforts. Please give source & date, if not
original.

SCIENTIFIC NAMES should follow Hitchcock &
Chapman's *Flora of the Pacific Northwest*
where possible. Use of both scientific &
common names is encouraged. Genus & species
names are underlined or italicized.

STATUS OF ORIGINALS Manuscripts & illustrations
will not be returned unless so be
requested.

The Bulletin is published as a service to
NPSO members & the public. Your suggestions
& comments are always welcome.

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

CHAPTER (if known) _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

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write your OLD ADDRESS: _____

CITY _____ STATE _____ ZIP _____

* **DUES** include monthly news bulletin. Full membership runs from January through December. Quarter membership runs from September through December.

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* **CONTRIBUTIONS:** Jean Davis Memorial Award Fund . . . \$ _____
Rare and Endangered Plant Fund . . . \$ _____

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Please make checks for dues & contributions payable to NATIVE PLANT SOCIETY OF OREGON. Send completed form
& full remittance to: MARY FALCONER, NPSO MEMBERSHIP CHAIR, 1920 Engel Ave. NW, Salem, OR 97304.

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To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

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April 1988

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CHAPTER NEWS

IMPORTANT NOTICE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine so proper dress and footwear is essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage and terrain. You participate at your own risk. Bring water and lunch.

Blue Mountain

In April, we will join the William Cusick Chapter for two field trips, to the Mines River and to Morgan Lake. See their announcements, or contact Rachel Sines (963-0674) or Bruce Barnes (276-5547) for details.

Sometime in May, date to be determined, we expect to take a field trip to the ecology preserve on the Hanford Reservation.

28 May, Sat.

Field trip to Fraser Campground (between Ukiah and LaGrande). Meet at the BNOG Greenhouse in Pendleton at 8:00 am, or at the Campground itself at 9:30 am. Leader is Karl Urban.

11 June, Sat.

Field trip to Olive Lake. Meet at BNOG Greenhouse at 7:30 am, or at the 395 Junction west of Ukiah at 8:30 am.

19 June, Sun.

Field trip to Skyline Drive. This is a long day's trip on a sometimes rough gravel road, from Jubilee Lake into Washington state. Meet at BNOG Greenhouse at 7:30 am, or at 8:30 am at the turnoff to Jubilee Lake in Tollgate. Leader is Bruce Barnes.

Corvallis

11 April, Mon.

Meeting, 7:30 pm, room 4080, Cordley Hall, OSU. Jon Diehl will give a slide show and talk titled: "Biological weed control and the native flora: impact of the cinnamon moth on Senecio triangularis."

Emerald

11 April, Mon.

Meeting, 7:30 pm, University of Oregon Herbarium. The Herbarium has been moved to a new location. Dave Wagner, Herbarium Director, will give a tour and information about the use, contents, and history of this special and new place for botanists past and present.

30 April, Sat.

Research trip to census a population of rare plants, Lomatium bradshawii, in the Fern Ridge area. Depart from SEHS at 10:00 am. ELM Botanist Peter Zika leads. Participants should inform leader of their attendance; call 687-6681 days, 896-3853 evenings and weekends before 9 pm. Expect mud and water.

High Desert

- 23 April, Sat. Field trip to The Island. This is a moderate 3 mile hike to a low elevation peninsula in the Cove Palisades State Park which has been essentially ungrazed. Meadow and sage steppe are predominant. The trail is rocky and steep in some areas and snakes have been seen. Leader: Stu Garrett (389-6981).
- 26 April, Tue. Meeting, 7:30 pm, Bend Senior Center, 1036 NE 5th St., Bend. For information, call Joyce Bork (389-5579).

Mid Columbia

- 6 April, Wed. Meeting, 7:30 pm, Pietro's Pizzas Place, 3320 W 6th St., The Dalles. Cheryl McAffrey, BHM Botanist from Burns, will present program of "BHM Research Natural Areas in Eastern Oregon: Opportunities for Study." Slides will highlight botanical characteristics of Research Natural Areas and those aspects needing further study.
- 4 May, Wed. Meeting, 7:30 pm, Mosier School. "Ethnobotany in the Islands of the Western Pacific" will be presented by Bob Bevacqua, OSU horticulturist.

North Coast

- 7 April, Thurs. Meeting, 7:00 pm, State Office Building, 3600 3rd St., Tillamook. Discussion of the family Liliaceae. 1988 officers: Clara M. Fairfield, President; Sallie Jacobsen, Vice-President; Clarice Maxwell, Secretary-Treasurer. Election tonight.
- 23 April, Sat. Field Trip to Tryon Creek State Park and Canassia Preserve. Meet at Tillamook FUD parking lot, 9:00 am. For more information, call Clarice Maxwell (842-7023).
- 5 May, Thurs. Meeting, 7:00 pm, State Office Building, 3600 3rd St., Tillamook.

Portland

- 2 April, Sat. Field Trip to McLeod Creek and Tanner Creek Falls. Meet at Park-and-Ride lot at Gateway MAX station. Leader, Dave Dobak (248-9242). Meet at 8:30 am.
- 9 April, Sat. Field Trip to Catherine Creek in Washington. Meet at Gateway MAX park-and-ride at 8:30 am, or Hood River Inn at 9:30 am. Leader, Louise Godfrey (223-4785).
- 12 April, Tue. Meeting, 7:00 pm, First United Methodist Church, 1838 SW Jefferson St., Portland. "Mysteries of the Monotropideae Revisited," Dan Luoma from OSU will present colorful slides and the latest information about the mycotrophic plants which are relatives to rhododendrons and huckleberries.
- 16 April, Sat. Field trip and work party at Canassia Preserve. Meet at Lloyd Center at 8:30 am, or at Canassia Preserve, near West Linn High School. Bring clippers, boots, gloves, lunch, water. Poison Oak may be a concern! For information, call 228-9561 or Charlene Holmwarth (284-3444).
- 23 April, Sat. Field Trip to 15 Mile Creek. Meet at Gateway MAX park-and-ride at 8:00 am. The drive is 2 hours. Leader: Rick Brown (223-1146).
- 30 April, Sat. Field Trip to Krista Thie property overlooking the White Salmon River. Meet at Lloyd Center (16th and Clackamas) at 8:00 am, or Bingen Winery at 9:30 am. Leader: Elisabeth Handler (244-5320).
- 7 May, Sat. Field trip to sand dunes in the Columbia River Gorge. Meet at Gateway MAX park-and-ride at 8:00 am. Leader: Russ Jolley.
- 14-15 May, Sat.-Sun. Flower Show.
- 28-30 May, Memorial Day Weekend. Field Trip to Lakeview Area. Meet at noon Saturday at the Safeway Store in Lakeview. Allow 8 hours driving time, at least. Leader: George Lewis (292-0415).

Siskiyou

14 April, Thurs.

Meeting, 7:30 pm, Room 171, Science Building, 803C. "The Native Hawaiian Flora, from the Seacoast to the Mountains," including a hike to one of the wettest places known on the Island of Maui where there is a truly unique vegetation. A slide show and presentation by Alan Curtis, former botanist at the Eugene District office of BLM.

Willamette Valley

2 April, Sat.

Field trip to Baskett Slough. Meet at South Salem K-Mart, 25th & Mission St., at 8:15 am. Leaders: Irma Bunnell and Frances Schaeffer. For information, call Wilbur Bluhm (393-2934).

18 April, Mon.

Meeting, 7:30 pm, First United Methodist Church, corner of SE Church and State Streets, Salem (use the Church St. entrance). Wilbur Bluhm will help us prepare for an excellent slate of field trips for the Annual NPSO Meeting (June 25) by giving a program on "The Flora of Silver Falls State Park and the Lower Cascades."

23 April, Sat.

Field trip to Oregon 4H center in Salem. Meet at South Salem K-Mart at 8:15 am. Leader: Wilbur Bluhm (393-2934).

Wm. Cusick

For information, contact Rachel Sines (963-0674).

1988 NPSO ANNUAL MEETING — Silver Falls State Park

Please return the Registration Form, by May 15, with check payable to Willamette Valley Chapter NPSO.

Mail to:

NPSO
P. O. Box 68
Salem, Oregon 97309

Please help by registering as soon as possible.

WHERE: June 24-26.

WHAT: The annual meeting is held to allow members from throughout the state to get acquainted. All members are encouraged to attend. Non-members are also welcomed.

The Friday social hour will begin at 8 p.m. with a game of plant-dictionary or Twenty Questions.

Saturday's agenda includes field trips during the day (9 a.m. to mid-afternoon), and a dinner banquet, followed by the installation of the newly-elected officers, awards, announcements, and a presentation by a special guest speaker, which is scheduled to begin at 8 p.m. The topic will be "Endangered Species at the State Level."

The state officers' board meeting will be held at 9 a.m. Sunday. Bob Weiske will give an informal report on implementation of Oregon's endangered plant legislation. General membership is welcome to attend.

WHERE: The Conference Center at Silver Falls State Park, 26 miles east of Salem on Highway 214. This is a lovely wooded setting within a park famous for spectacular waterfalls, fern-covered cliffs and slopes, and interesting geology.

An overnight stay after the banquet may be especially desirable because of the curving country road that leads through the Cascade foothills to the Conference Center. Recreational facilities abound at the Center: an outdoor swimming pool, volleyball court, horseshoes, bicycles, croquet, jogging trails, etc. Accommodations are double-occupancy rooms in 8-unit lodges, with shared bathrooms. Twin beds, and bed and bath linens are provided. Campsites with hookups are also available on a "first come, first served" basis (make individual arrangements). Meals will be served at the Conference Center dining hall. Field trip participants can order box lunches.

SEE ENCLOSED REGISTRATION FORM.

NEW MEETING PLACE FOR PORTLAND CHAPTER FIELD TRIPS

Because of construction on I-84, the 122nd Avenue entrance and exit will be closed this spring and summer. Portland Chapter Field Trips will no longer meet at the K-Mart.

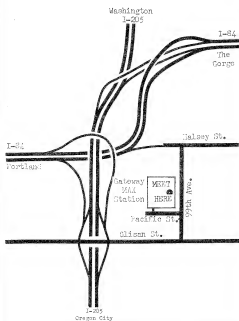
Most trips will meet at the Park and Ride lot at the Gateway MAX Station.

From Portland on I-84, use the Halsey-Gateway exit, then south on 99th Avenue and west on Pacific Street.

From The Gorge on I-84, use the I-205 Southbound exit, then...

From anywhere on I-205, use the Glisan Street exit, then east on Glisan, then north on 99th Avenue and west on Pacific Street.

Leaving the meeting place, east on Pacific Street, south on 99th Avenue, west on Glisan Street, to the I-205 and I-84 freeway entrance.



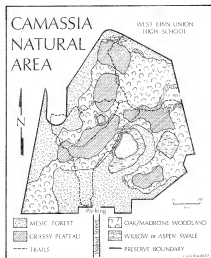
CAMASSIA NATURAL AREA -- THE NATURE CONSERVANCY

The Portland Chapter of NPSC has taken on the task of helping The Nature Conservancy maintain the Camassia Natural Area in West Linn. Members are asked to participate in scheduled projects, from time to time, and visits are suggested. Here are some of the features of the Area.

The diversity of plant life includes woodland of Oregon white oak, madrone, and douglas fir; wildflower meadows and rock gardens; maple and cottonwood forests; and willow and aspen swales and ponds. More than 300 species have been identified there, including many that are slowly disappearing from the Willamette Valley, such as Hall's aster, Willamette Valley bitter-cress, pale larkspur, and quaking aspen.

In mid to late April, the grassy plateaus are awash with the color of blooming Camassia quamash, Collinsia grandiflora, and Electritis congesta. The maple-cottonwood forest hosts Erythronium oregonum, Trillium chloropetalum, Trillium ovatum, and Asarum canadense. Rhus diversiloba is abundant, too!

The diversity of plant communities and habitats provides for a wide variety of wildlife on the preserve. Species such as the white-footed mouse, ringneck snake, Pacific tree frog, and the western gray squirrel can be seen on the preserve. Wood ducks sometimes use the ponds and it is common to see California quail, rufous hummingbirds, hairy woodpeckers, western bluebirds, golden crowned kinglets, and cedar waxwings flying overhead or nesting in the trees.



As you probably well know, the Draft Environmental Impact Statement (DEIS) for the Willamette National Forest, is available for public comment until May 16, 1988. The DEIS is overwhelming, even to someone trained in natural resources: it is well over 1,000 pages long, is housed in several hefty volumes, and is riddled with tables full of institutional acronyms such as MKVD, PAOT, MNFUD, PNV, SONA, ad nauseum.

It is very important that conservationists and natural history lovers comment on the plan. At a recent planning meeting, Willamette National Forest personnel stated that they are hearing more from the timber industry than conservationists. The timber industry has a well-organized and systematic campaign favoring highest timber cuts to influence Willamette Forest planning. We must not sit aside and let federal decisions be dominated by one industry whose objectives are detrimental to true "multiple use" of YOUR national forest.

The Willamette National Forest has a 30-page booklet which summarizes the hefty DEIS, available if you call 687-6745 or write the Willamette National Forest Mqts., P.O. Box 10607, in Eugene, 97440. Oregon Natural Resources Council (ONRC) and the Many Rivers Chapter of the Sierra Club has made some comments regarding the Willamette DEIS from a conservationist's perspective. The following summary incorporates some of ONRC's and the Sierra Club's concerns about the draft forest plan:

1) The Forest Service's economic analyses are flawed. They have failed to recognize and discuss the elasticity of bidding prices based on the economic reality of supply and demand. Also recent job losses in the timber industry are due to mill automation and overseas export of Oregon logs, not due to "preservationist" activities. This can be seen by recognizing that a 30% loss in timber-related jobs occurred while the cut levels were at an all time high.

2) The Oregon timber industry makes up about 25% of Oregon's economy and is declining to 15%. All other Oregonians including all non-timber economic interests make up 75% (soon to increase to 85%) of the state economy. Harvest of almost all the remaining old growth is not in interest of Oregon's long term economy. Tourism, outdoor recreation, services, and high technology are now the largest and fastest growing components of the Oregon economy.

3) Over the last 100 years, over 90% of the state's virgin forest has been cut. Most private tracts of forest have now been cut. The remaining old-growth stands are on Oregon's public lands. Under the Willamette National Forest's Preferred Alternative (Alternative J), over 165,000 acres of mostly old-growth forest will be clearcut in the next 15 years. This would mean that over two-thirds of the remaining roadless areas would be liquidated. The preferred alternative would increase the old-growth timber cut by 17% over the previous ten year average (and the timber industry is lobbying for a much higher cut)! Over 800 miles of new logging roads would be constructed.

4) Scientists from the Forest Service, BLM, and major research institutions around the world warn that if the "fragmentation" of our national forests by roads and clearcuts continues, ecosystems are in danger of permanent destruction. If current practices continue, we will lose biological diversity (including our forest plants), soils, water quality, fisheries, and wildlife (including the spotted owl, marbled murrelet), to name a few irreplaceable forest values.

5) Some of the Forest Service scientific analyses are seriously flawed or inadequate. The cumulative effects of hundreds of planned successive clearcuts and accompanying hundreds of miles of road building have not been adequately analyzed, or even addressed. The hydrological effects discussed in the draft EIS fail to acknowledge existing hydrological studies. "Old growth" is not adequately defined. The Forest Service lumps "mature" (trees over 100 years old, more than 21" in diameter) with "old-growth" (trees over 250 years old, more than 32" in diameter) in the draft EIS. This practice makes it appear there is more old-growth than actually exists.

The monitoring of botanical diversity is not adequately addressed. How will the Forest Service ensure us that all aspects of forest ecology (including equitable amounts of low elevation old growth forest communities and herbaceous diversity) are being studied and managed for?

The Forest Service includes in their timber producing lands the forested scenic highway corridors, public campgrounds, lakeshores etc. The timber on these areas goes into their sustained yield calculations; if they include these lands as timber producing lands, they plan on logging them or over-logging somewhere else to compensate for the lost timber production (The ONRC alternative takes this into account and removes these lands from the timber production base of the forest. The USFS Alternative C includes these lands in the timber producing base. This is the basic difference between these two alternatives).



Sisyrrinchium douglasii

(Illustration from Hitchcock et al., *Flora of the Pacific Northwest*, used with permission from the publisher)

6) We have to speak up now; in a few short years it will be too late for our remaining old growth forests and natural diversity. There is a sharp concentration of timber sales directed at the remaining large diameter timber so that all mills may be converted to automated second growth trees. Old growth is used primarily by the timber industry to make pulp for paper and veneer for plywood—just as easily made from smaller second growth trees.

7) Many of the large chunks of roadless area frequently used by botanists, hikers, backpackers, cross-country skier, and fishermen are slated to be clearcut in the next 15 years. WE MUST BRING TO THE ATTENTION OF THE FOREST SERVICE THAT WE KNOW AND LOVE THESE AREAS!!! Pick an area you have visited or know of. Use the maps in the DEIS, check its proposed fate. Odds are, if its not already in a Wilderness area, its slated to be clearcut. The following roadless areas are slated to be all or at least partially clear cut if the USFS "preferred" alternative J is chosen:

Bull of the Woods, Opal Creek, and Elkhorn: These roadless areas contain some of the largest remaining contiguous stands of lower elevation old growth. Soil scientists have determined that nearly 80% of these areas have severe erosion potential (hence severe water quality and fisheries problems could occur if roaded and logged) and that over 40% is unsuitable for timber management.

Mt. Jefferson, Eritzenbush: These roadless areas contain some of Oregon's most beautiful alpine areas. Adjacent to the Mt. Jeff Wilderness boundary, these areas are heavily used for recreation and include the Eritzenbush Gorge, Devil's Ridge, Outerson Mtn, Woodpecker Ridge, Independence Rock, Marion Plate, Twin and Big Meadows.

Middle Santiam: This lower elevation old-growth forest is slated to be almost totally developed for clearcuts if Alternative J is selected. The Middle Santiam roadless area now offers wonderful hiking and x-c skiing. An extremely important area for native Chinook spawning, this watershed is one of the few Oregon rivers not stocked with hatchery fish. Unstable soils in this area make logging and roadbuilding extremely detrimental and costly. The Three Pyramids, Freezout Creek and Swamp Peak are in this area.

Old Cascades: A diverse forest community, with over 17 species of conifer and spectacular wildflower areas are found in this roadless area. Jumpoff Joe Mtn., Echo Mtn., Moose Lake and Creek, Gordon Meadows, Browder Ridge, Menagerie and Twin Buttes are in this area that is targeted for clear cut logging.

Mt. Washington: Near Santiam Pass and Hoodon, this popular area contains interesting volcanic areas, miles of cross-country skiing and hiking trails, and great camping. The old growth forests on western slopes of Mt. Washington and the Big Lake Valley are slated to be roaded and clearcut if the preferred alternative is selected.

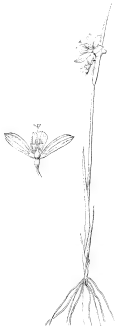
Three Sisters: The areas adjacent to the Three Sisters Wilderness have ecologically valuable remnants of low elevation old growth. Almost all these roadless areas are scheduled for roading and logging even though the DEIS notes severe surface run-off and erosion potential in these areas. Frog Camp, Gold Creek, Rainbow Falls, Mosquito Creek, French Pete, and Roaring River are among the roadless parcels slated to be cut.

Mt. Wagon: This area is particularly steep and susceptible to erosion, yet in the USFS preferred Alternative J, over 80 percent of this over 9 square mile area is slated to be cut.

McLemmon Mountain: This area, containing almost 14 square miles of old growth forest, is the headwaters for the McKennie River and contains the popular Ollalie Ridge Trail. Over 90% of this area is slated to be developed for timber harvest in the next 15 years in Alternative J.

Chuckane Mountain: Over half of this 25 square mile roadless area will be roaded and developed for logging with alternative J. This popular hiking and fishing area has miles of trails and views of the Three Sisters and Waldo Lake area. The majority of the area has potential for severe surface erosion, and water quality degradation if logged and roaded.

Waldo Country: Almost 100 square miles of unprotected roadless area surround Waldo Lake, lauded by scientists as the world's purest lake. Hundreds of miles of trails wind through dense old-growth forest that contains rare plant species. Though recreational use of the area is high, the Forest Service Preferred Alternative would log and road the vast majority of this area including favorite areas such as Cornpatch, Many Prairies, Salmon Creek, Koch and Moolack Mtns., and Charleston Butte.



Siyrinchium inflatum

(Illustration from Hitchcock et al., *Flora of the Pacific Northwest*; used with permission from the publisher)

Hardesty Mountain: This six-plus square mile roadless area is Eugene-Springfield's "backyard wilderness". It contains low-elevation old growth, bear, cougar, and the spotted owl. Over half this area is slated for logging and clearcuts in Alternative J, the USFS preferred alternative.

Diamond Peak: Two square miles of the area adjacent to the northern Diamond Peak Wilderness are slated to become targets for roads and logging. Frequented by hikers and backpackers, this quiet area offers solitude, gently rolling old-growth forests, and spring-fed meadows and swamps.

Both the USFS Alternative C and the ONRC Alternative protect all these areas. All other alternatives, including the U.S. Forest Services preferred Alternative J severely threaten all these areas. The ONRC Alternative is not shown in the summary document, but is discussed in Chapter 11, pages 21-27 in the huge draft Environmental Impact Statement.

NOTE: The USFS Preferred Alternative emphasizes logging and logging to an extent that is detrimental to other forest values. The National Forest Management Act of 1976 Congress mandated that each national forest give balanced consideration to all uses of the forest. One of the nine USFS alternatives allows such a high cut that it is illegal under sustained yield laws. Remember, virgin forests are multiple use; they foster tourism, fisheries, water quality, habitat for plants and animals, back country opportunities, skiing, hiking, botanizing, scenic values, and a gene pool for the future.

SEND YOUR LETTER SOON (due by May 16, 1988) to:

FOREST PLANNING
Willamette National Forest
P.O. Box 10607
Eugene, Oregon 97440

--Carol Savonius, Emerald Chapter
NPSO Conservation Committee

FORMATION OF AN EDUCATION COMMITTEE

There has been a great interest by a number of groups and individuals in obtaining more information on the State Endangered Species Bill. As a result, I have given a few slide shows on the subject but would like to work up a slide show and brochure that could be easily distributed to other groups without the need for a speaker to travel all over the state.

The subject of a slide show for education of the general public was discussed at the Board Meeting in January. It was suggested that a formation of an Education Committee would be appropriate to undertake this task.

Both Bob Meinke of the Department of Agriculture and Charlie Bruce of the Department of Fish and Wildlife are interested in helping on the project. Anyone interested in helping from the NPSO should drop me a postcard or give me a call. So far Gail Baker has volunteered to help! This will be a great opportunity for the NPSO to help educate the public on rare plants in Oregon and why they need protection.

Esther McEvoy
754-0893

FOREST SERVICE DOES NOT OPEN UP MARYS PEAK
TO COMMERCIAL USE!

A year ago six television stations asked the Siuslaw National Forest to review the electronic use of Marys Peak. The present policy allowed for government use only. The television stations wanted to open up the peak to commercial use. The public was invited to comment on draft alternatives which ended January 8, 1988. The public comments were reviewed with the findings that there was a limited support for opening up the area to commercial use and a lot of local opposition to it. The problems associated with increased electronic use was a major concern to many people.

The Forest Supervisor Tom Thompson has asked that no changes to the current management direction will be made at this time. Also the Regional Forester James Torrence has asked the Forest Supervisor to submit the necessary paper work for designation of the Marys Peak Scenic Botanical Area as a Special Interest Area. The summit of Marys Peak contains a unique array of plant communities and the designation of the Scenic Botanical Area will help protect the area.

A SPECIAL THANK YOU to Phil Hays, Liz and Bob Frenkel, Chuck Leach, Marys Peak Group of the Sierra Club, Corvallis Garden Clubs and the Corvallis Chapter of the NPSO for helping on this project!

Esther McEvoy
Corvallis Chapter

OPINIONS SOUGHT: Should snowmobiles be allowed on the popular Steens Mountain in Oregon's high desert?

The federal Bureau of Land Management has been asked to allow snowmobiles on the mountain but needs public input before deciding.

Comments may be sent to Josh Warburton, BLM district manager in Burns, at his office, HC 74-12533, Highway 30 West, Hines, Ore. 97732.

Additional public meetings have been scheduled for the Deschutes National Forest supervisor's office in Bend at 7 p.m. April 5 and in the Burns BLM office (near Hines) at 7 p.m. April 7.

BOOK REVIEW

Maubrey, D.J. 1987. The plant-book.
Cambridge University Press, Cambridge.
\$34.95.

J.C. Willis's Dictionary of Flowering Plants is a fascinating botanical reference work. It contains, in alphabetical order, the families and genera of ferns, fern allies, gymnosperms and flowering plants. In addition to accepted names and synonyms, Willis includes descriptions of families with distribution and genera, number of species, distribution, and fascinating information on the uses of the plants.

In 1966 and again in 1973, Mr. Airy Shaw of New published a revised edition of Willis that dealt with all the names used at the genus level or higher. The increase in the number of names meant that much of the general information had to be left out. In matters of nomenclature Shaw's edition of Willis is excellent and very useful in finding synonyms or tracking down that obscure tropical genus. Unfortunately much of the information that made Willis "the most remarkable botanical works of reference ever written" (at least in the view of P.W. Richards, Journal of Ecology 63 (1975) 368) is missing. The increase in the number of names meant that much of the general information had to be left out.

Fortunately D.J. Maubrey designed his The plant-book: a portable dictionary of the higher plants to replace the earlier

editions of Willis. Included once again are a host of fascinating details concerning the taxa covered. He left out much of the tribal and subfamilial positions of certain genera but included the best of the rest of the old Willis.

A typical entry:

Eschscholzia Cham. Papaveraceae. 8-10 W N A. Concave receptacle; (N) falling as a cap; in dull weather each petal rolls length. encl. some stamens; valves of fr. curl spirally & fr. explodes; siks. Cult. as orn. ann. esp. E. californica Cham. (California poppy, Calif. (state flower)) - cys with white or pink fls as well as yellow wild forms, colourless latex mildly narcotic & used by Indians against toothache; E. mexicana E. Greene used as a copper indicator in Arizona

I didn't know that! The amount of information is astounding: all the way from technical descriptions and relationships of taxa according to Cronquist to common names. Maubrey claims that the peeled rhizome of Polystichum acrostichum has a banana taste. I didn't know that!

The abbreviations might annoy some readers, but they are quickly learned (or figured out). The book of 706 pages is nicely printed and bound in a flexible plastic cover.

A plant-book is a plant book worth owning.

Frank A. Long Shakyou Chapter

PORTLAND FLOWER SHOW May 14-15

It's Show-and-Tell time again for Portland Chapter members, getting ready for a display of native plants in the main exhibit hall at World Forestry Center.

Saturday, May 14 and Sunday, May 15 are the dates, from 10 a.m. to 5 p.m. each day. Admission is the regular WFC fee of \$2, or \$1 for seniors and those under 18 years, no charge to WFC members.

As the theme "Flowers in the Forest" implies each display table will reflect a forest habitat, such as the fir and hemlock of the Cascade west slopes, ponderosa and juniper to the east, Sitka spruce along the coast. Rare/endangered species will appear only in photographs.

It's not too early for you to be telling friends to see "Flowers in the Forest." Lots of members are already at work to make this another fine display with Jeanne Huffstutter as chairman, Florence Ebeling, Esther Kennedy and Louise Godfrey on the steering committee.

*But if you're not already on the work list, Portlanders, and want to join the fun, please call one of the committee.

OWC OFFERS "WILD OREGON VENTURES"

Whitewater rafting on Oregon Rivers, llama trekking in Oregon's mountains, and trips to Costa Rica, East Africa, Ecuador and the Galapagos Islands, the Amazon, Australia, and Alaska are offered by OWC's Wild Oregon Ventures. Brochures are available from:

Wild Oregon Ventures
1161 Lincoln Street
Eugene, Oregon 97401
503-344-0675

STATE COMMITTEE CHAIRS

WFO Wildflower Posters & Plans Susan Kofahl
P.O. Box 151, Mosier, OR 97040; 478-3376

Notecards George Lewis
8230 SW Cashmere Lane, Portland, OR 97225; 292-0415

T-shirts Nadine Smith
1129 Jackson St., Eugene, OR 97402; 344-6478

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Vice President Marjorie Willis
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Legislative Chair Esther Mulvey
2080 SW Williams, Corvallis, OR 97331; 754-8893

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Corvallis Charles Sage
Harwood, 650 Corvallis, OR 97331; 754-4708
Emerald (Chapter 476) Neil Baker
2414 Maclellan St., Eugene, OR 97401; 344-0112
High Desert (Iberd area) Joyce Cook
642 SW Broadway, Bend, OR 97701; 389-3177
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Box 217, Mosier, OR 97043; 478-2114
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7705 Lindsay Creek Rd., Corvallis, OR 97331; 612-4342
Portland Beth Armstrong
2020 SE 2nd St., Clatskanie, OR 97015; 426-2151
Skagit Frank Lang
325 Taylor St., Seattle, WA 98102; 425-1225
Willamette Valley (Salmon area) Pat Saperstone
1202 Barton Road, Sumner, OR 97148; 769-4444
Mt. Charleston (Lebanon area) Rachel Lane
504 S. Ave., Medford, OR 97504; 962-0474

MEMBERSHIP

Membership Chair Mary Falconer
700 Engel Ave., NW, Salem, OR 97304; 384-4479
Membership in the Native Plant Society of Oregon is open
to all. Membership applications & changes of address
(including old address & zip code) should be sent to the
membership chair.

BULLETIN

Editor Jan Dehak
2584 SE Cedar St., Portland, OR 97202; 226-6422

The 1988 Bulletin is published monthly. Copy is due by
the 15th of the month & should be sent to the editor.
News, articles, photos, drawings, & non-topographic
materials are welcome.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typeset; therefore typed,
camera-ready copy is much appreciated. But
no submission will be rejected because it is
not typed. Please proofread & check facts.
DEADLINE: 15th of each month

FORMAT: Copy should be typed in 4x inch wide
columns, of any length. Author's name & short-
title affiliation (or other organization) are
typed at the end of the article. There is no
standard paragraph treatment; one of these
is suggested:

- * for long articles, double space between
paragraphs, but do not indent the first
word of the paragraph
- * for short articles or short paragraphs,
where double spacing looks odd, indent
the first word of the paragraph instead
- Type your own headings, centered, all caps.
In case of special format, e.g. plant keys,
you are free to choose the layout.

- COPYING:** For each submission, provide
a title
- * author—specify whether byline is desired
for new items
- * instructions as to whether item is to be
used in entirety or accepted at editor's
discretion
- * source & date if item is not original
- ILLUSTRATIONS:** Black & white prints, ink
drawings, woodcuts, halftones, et al. We
welcome small doodles as well as larger
efforts. Please give source & date, if not
original.
- SCIENTIFIC NAMES:** should follow Hitchcock &
Chapman's *Flora of the Pacific Northwest*
where possible. Use of both scientific &
common names is encouraged. Genus & species
names are underlined or italicized.
- REVIEW OF ORIGINALS:** Manuscripts & illustra-
tions will not be returned unless it is
requested.

The Bulletin is published as a service to
NPSO members & the public. Your suggestions
& comments are always welcome.

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

CHAPTER (if known) _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (Home) _____ (Work) _____

IS THIS A CHANGE OF ADDRESS? If so please
write your OLD ADDRESS: _____

CITY _____ STATE _____ ZIP _____

* **DUES** include monthly news bulletin. Full membership runs from January through December. Quarter member-
ship runs from September through December.

() NEW	() QUARTER MEMBERSHIP (\$2.50)	() RENEWAL
() Student \$ 7.50	() Sustaining \$ 25.00	
() Regular 10.00	() Patron 100.00	
() Family membership 15.00	() Life member 500.00	

* **CONTRIBUTIONS:** Jean Davis Memorial Award Fund . . . \$ _____
Rare and Endangered Plant Fund . . . \$ _____

*All contributions to the Native Plant Society of Oregon, a non-profit organization, are tax deductible.
Please make checks for dues & contributions payable to NATIVE PLANT SOCIETY OF OREGON. Send completed form
& full remittance to: MARY FALCONER, NPSO MEMBERSHIP CHAIR, 1920 Engel Ave. NW, Salem, OR 97304.

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Portland, OR 97210

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To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

Volume 21 No. 5

May 1988

ISSN 0884-5999

CHAPTER NEWS

IMPORTANT NOTICE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine so proper shoes and footwear is essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage and terrain. You participate at your own risk. Bring water and lunch.

Blue Mountain

23 May, Sat.

Field trip to Frazer Campground (between Ukiah and LaGrande). Meet at the BNOG Greenhouse in Pendleton at 8:00 am, or at the Campground itself at 9:30 am. Leader is Karl Urban.

11 June, Sat.

Field trip to Olive Lake. Meet at BNOG Greenhouse at 7:30 am, or at the 395 Junction west of Ukiah at 8:30 am. For information, contact Bruce Barnes (276-5547).

19 June, Sun.

Field trip to Skyline Drive. This is a long day's trip on a sometimes rough gravel road,, from Jubilee Lake into Washington state. Meet at BNOG Greenhouse at 7:30 am, or at the turnoff to Jubilee Lake in Tollgate at 8:30 am. Leader is Bruce Barnes (276-5547).

Corvallis

7 May, Sat.

Field trip to the Findlay Game Refuge south of Corvallis to observe vernal pools and wetlands. For more information, contact Philip Huyen (753-1065).

9 May, Mon.

Meeting, 7:30 pm, Room 4080, Corvallis Hall, OSU. Dr. Ken Chambers will present "Floristic Relationships of Union Peak, Clatsop County, Oregon."

Emerald

9 May, Mon.

Meeting, 8:00 pm, Amazon Community Center, 2700 Hilyard St., Eugene. "The Nature Conservancy Land at Willow Creek." Cathy Macdonald, TNC Land Steward, will inform us about this unique area of native Willamette Valley Prairie at the edge of Eugene.

22 May, Sun.

Field trip. Explore Linpy Hook with Freeman Howe and see the unique and northern most population of the snowplant, Sarcodes sanguinea, and other special plants of this area. For more details call 344-0312 and watch for announcements in the Register Guard.

High Desert

21 May, Sat.

Field trip to the Black Hills. Leave from behind McDonalds Restaurant, 2045 NE 3rd, Bend at 8:30 am sharp. Located in the Christmas Valley Basin this moderate 2 mile stroll will feature rare plants in an area of juniper woodland which has been set aside as a botanic preserve by the BLM. If time allows we might take a sidetrip to the Fossil Lake sand dunes or the Lost Forest. Leader: Stu Garrett (339-6981).

- 4 June, Sat. Field trip to the Ochoco/Hlg Summit Prairie. Christy Steek will lead us on this trip to her favorite flower areas. Easy hiking and a fair amount of driving. We will carpool in Bend at the McDonalds at 8:30 am and meet others at Christy's home on Ochoco Reservoir. Leader: Christy Steek (447-4693).

Mid Columbia

- 4 May, Wed. Meeting 7:30 pm at the Mosier School. "Ethnobotany of the Western Pacific Islands" will be presented by Bob Bevacqua, OSU horticulturalist.
- 1 June, Wed. Meeting 7:30 pm at the Mosier School. Selected slides of native NW plants from the private collection of Dr. John Hammond, donated to the Berry Botanic Garden.
- 4 June, Sat. 2nd Annual Knapweed Pull on the Tom McCall Rowena Nature Conservancy Preserve. Starts at 9:00am. Bring gloves, hand tool(s), and lunch. Hike the hilltop trail in the afternoon and/or return to Susan Kofehl's home for refreshment rewards!

North Coast

- 5 May, Thurs. Meeting at 7:00 pm in the State Office Building, 3600 3rd Street, Tillamook.

Portland

- 7 May, Sat. Field trip to sand dunes in the Columbia River Gorge. Leave the Gateway MAX Park-and-Ride at 8:00 am. Leader: Russ Jolley.
- 10 May, Thurs. Meeting, 7:00 pm. First United Methodist Church, 1838 SW Jefferson St., Portland. Chris Teak, Mt. Hood National Forest Ecologist, will give a program on "Forest Plant Communities of the Cascade Mountains."
- 14-15 May, Sat./Sun. Portland Chapter Plant Show at the Western Forestry Center.
- 21 May, Sat. Field trip to Hog Mountain in the Gorge. Leave the Gateway MAX Park-and-Ride at 8:00 am. Leader: Vance Merrill.
- 28-30 May Memorial Day Weekend. Field trip to the Lakeview area. Meet at noon Saturday at the Safeway store in Lakeview. Allow 8 hours driving time, at least. Leader: George Lewis (292-0415).
- 2-4 July July 4th Weekend. Field trip to Greys Island. Barb Fox is leading a trip to this island in the San Juan Islands in Washington. She requests that those interested in going send her a postcard (11455 SE 35th, Milwaukie, OR 97222). Be sure to include your phone#.

Siskiyou

- 12 May, Thurs. Meeting, 7:30 pm, Room 171, Science Bldg., SOCC. The Eagle Cap Wilderness will be featured in a slide show by BLM Botanist, Peter Zink. He will present a slide show from last summer's travels through this unique alpine limestone mountain range in NE Oregon looking for endemic plants.

Willamette Valley

- 7-8 May, Sat./Sun. Wildflower Show, Silver Falls State Park, Silverton, Oregon.
- 14 May, Sat. Field trip to the Jackson-Frazier Wetlands. Leave the So. Salem K-Mart parking lot at 25th and Mission at 8:00 am. Leader: Wilbur Bluhm (393-2934).
- 21 May, Sat. Field trip to Mt. Hebo. Leave the So. Salem K-Mart at 8:00 am. Leader: Clint Urey (743-2302).

Wm. Cusick

For information, contact Rachel Sines (963-0674).

ANNUAL MEETING REGISTRATION (DUE NOW!!)

Don't wait until the last minute; don't put it off. Register today for the 1988 Annual Meeting. It will begin the evening of June 24 and end noon on June 26. The registration form is in this Bulletin and the April one. See last month's issue of the Bulletin for more information.

ELECTION RESULTS

The Ballot Committee has tallied the results of the 1988 elections. Newly elected officers and Directors at Large are listed below. Formal installation will take place during the Annual Meeting Banquet on Saturday June 25th. Information and registration forms for the Annual Meeting are available in the April Bulletin.

A hearty thank you is extended to everyone who ran for an office position. Your willingness to serve NPSO in this manner is greatly appreciated.

President

Dan Luoma, Corvallis Chapter

Vice President

Marjorie Willis, Willamette Valley Chapter

Secretary

Cindy Hohenleitner, Willamette Chapter

Treasurer

Daphne Stone, Emerald Chapter

Directors at Large

Nancy Fredricks, Corvallis Chapter

Jerry Igo, Mid Columbia Chapter

Peter Zika, Emerald Chapter

1988 RESEARCH GRANTS AVAILABLE

Four research grants of \$400 each, including a special Leighton Ho Memorial award, are available for 1988. NPSO's grants are intended to stimulate research on Oregon's native plants by defraying travel and other direct project expenses. Research furthering the conservation of native plant species or communities is particularly encouraged.

The Leighton Ho Memorial award, in memory of the late Emerald Chapter member, will be reserved for a project focused on western Oregon plants.

Grant proposals should include the following:

- 1) A description of the proposed research project, its method and objective.
- 2) A simple budget explaining how the \$400 would be spent.
- 3) A description of the anticipated end product (a publication, a report, a set of annotated maps, etc.).

Proposals should be sent to Julie Kierstead, NPSO Research Grants Chairman, 11505 SW Sumnerville Ave., Portland, OR 97219 by May 15, 1988.

INTERMOUNTAIN FLORA UPDATE

The Northern Nevada Native Plant Society Newsletter had the following announcement:

For those interested in the upcoming volumes of the Intermountain Flora -- Dr. Arthur Cronquist reports that he is halfway through the manuscript for the composites (Aster Family) -- this will be Volume 5. Volume 3, the Heidiaceae (rose, saxifrage, spurge, buckhorn, carrot, and other families) is being marked for the printer and should be out this year.

Presently, Volume 1 (geological and botanical history, plant geography, vascular cryptogams, gymnosperms and glossary) for \$35.00, Volume 4 (the Asteridae except the Asteroaceae -- Gentianales, Solanales, Lamiales, Calitrichales, Plantaginiales, Gerophyllales, Campanulales, Rubiales, Dipsacales) for \$79.25 and Volume 6 (saxifrage) for \$63.95 are available from the New York Botanical Garden, Scientific Publications Dept., Bronx, NY 10458. The prices given here were current on March 28, 1988 and include postage.

The Columbia River Jerry Banks published

Wildflowers of the Columbia Gorge: A Comprehensive Field Guide, by Jerry Banks, includes 742 flowering plants, grouped by plant family. There is a guide to blooming seasons, and a pull-out map showing where to see the flowers. Published by Oregon Historical Society Press, the book is 344 pages with nearly 750 color photographs. Paperbound, 5 x 8 inches. \$24.95.

Columbia River Gorge, photography by James H. Holloway, includes 92 color photographs in a large-format book. Introduction, Flora and Fauna text, and captions are by Jane Jiskotti. Historical text is by David Kelly. Geological text is by John Dietz Allen. \$24.95.

(Both of these books will be available for sale at the Portland Chapter Flower Show on May 14 & 15 at the Western Forestry Center.)

At the last Board of Directors meeting it was pointed out that the current procedure for amending the By-Laws does not (in some cases) require the opportunity for all members to vote. This proposed amendment, instituted under the current By-Laws, is an example. It is being published in the Bulletin one month before the annual meeting, at which, a 2/3 majority vote of approval will result in its adoption.

Article X as amended will require all proposed amendments to be submitted to a vote by the entire membership (with 2/3 majority approval) for adoption. Additionally, all amendments will require proposal by majority vote at a general membership meeting (annual or special) or at a meeting of the Board of Directors. Currently, any member may propose an amendment in the Bulletin one month before an annual or special meeting of the membership. "Duly held" meetings are defined in Articles IV and VI. Changes in the existing language of Article X are indicated in the subsequent paragraphs as follows: **Added language is in bold type, existing language to be deleted is italicized within parentheses, retained language is in plain text.**

Article X — Amendment Procedure (Amendments)

Section 1. Proposal (Amendment Procedure)

Amendments to these By-Laws may be proposed by a majority vote of *(amended by a two-thirds vote of those present and)* those voting at any regular or special meeting of the Society, *(provided that the proposed amendment or amendments shall have been printed in the Bulletin at least one month before the meeting.)* or, amendments may be proposed by a majority vote of those voting at a meeting of the Board of Directors. *(, if approved by the Board of Directors,)*

Section 2. Adoption

Amendments so proposed at such duly held meetings shall *(may)* be submitted to the membership *(made)* by mail ballot, *(by)* and

shall require approval by *(a)* two-thirds *(vote)* of those voting, provided the proposed amendment(s) *(amendment/amendments)* shall have been printed in the Bulletin and that the ballots to be counted shall be returned to the chair of the vote counting committee postmarked not later than *(not be counted until at least)* one month after publication and ballot mail-out. The vote will be counted by a committee of at least two members appointed by the president and the results reported within two weeks of the closing date of postmark.

As amended Article X will read:

Article X — Amendment Procedure

Section 1. Proposal

Amendments to these By-Laws may be proposed by a majority vote of those voting at any regular or special meeting of the Society, or, amendments may be proposed by a majority vote of those voting at a meeting of the Board of Directors.

Section 2. Adoption

Amendments so proposed at such duly held meetings shall be submitted to the membership by mail ballot, and shall require approval by two-thirds of those voting, provided that the proposed amendment(s) shall have been printed in the Bulletin and that the ballots to be counted shall be returned to the chair of the vote counting committee postmarked not later than one month after publication and ballot mail-out. The vote will be counted by a committee of at least two members appointed by the president and the results reported within two weeks of the closing date of postmark.

Flowers in the Forest

A Display of Oregon Wildflowers

Portland Chapter
Native Plant Society of Oregon

World Forestry Center

10 AM - 5 PM
Saturday and Sunday
May 14 and 15



WFO Admission: \$2.00 adults
\$1.00 15 yrs. & younger
\$1.00 seniors

The Audubon Society of Portland, at its April 6 annual banquet, recognized NPSO for our contribution "to the initiation and passage of Oregon's endangered species legislation". I was pleased to be able to represent NPSO at the banquet and to accept the award on behalf of our organization.

NPSO has been handsomely rewarded for dipping our toe into the shark-infested waters of politics--not only did our bill pass, but the conservation groups that helped us so much during the legislative session are now recognizing us for our work. Not a bad deal. We are indebted to the Portland Audubon Society for their generosity.

Julie Kierstead
former Conservation Chair

Mothers Day Wildflower Show at Silver Falls

NPSO Willamette Valley Chapter will sponsor its eleventh annual Mothers Day Wildflower Show, Saturday and Sunday, May 7-8, at Silver Falls State Park. Hours will be 10 a.m. to 5 p.m. both days. Admission is free. The show will be in the Visitor Center.

Between 150 and 200 species of native plants and wildflowers, depending on the weather, will be collected by club members and displayed, together with their correct identification and a placard of information about the plant.

Rare and endangered species will not be on display, but will be shown pictorially through a slide show on both Saturday and Sunday. For more information, call Ann Scully, show coordinator, at 873-8681.

SECOND ANNOUNCEMENT: CONFERENCE ON THE FUTURE OF STUDIES ON ENDANGERED SPECIES OF PLANTS IN THE PACIFIC NORTHWEST.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF
SCIENCE, PACIFIC DIVISION (AAAS-PD)

JUNE 19, 1988 -- OREGON STATE UNIVERSITY --
CORVALLIS -- OREGON.

A HALF-DAY SYMPOSIUM OF TALKS DEALING WITH
THE FUTURE OF STUDIES OF ENDANGERED PLANTS
OF THE NORTHWEST REGION WILL BE OFFERED AS
PART OF THE PROGRAM AT THE AAAS MEETINGS IN
CORVALLIS, ON JUNE 19TH.

THE SYMPOSIUM IS INTENDED TO HIGHLIGHT THE
STATE-SUPPORTED WORK ON BEHALF OF RARE
PLANTS IN OREGON AND WASHINGTON; AND WILL
INCLUDE TALKS BY STAFF MEMBERS OF THESE TWO
STATE PROGRAMS. ROBERT J. MEINKE, BOTANIST
IN THE OREGON DEPARTMENT OF AGRICULTURE,
WILL GIVE A PRESENTATION TITLED: "PERSPECTIVES
AND PLANS FOR RESEARCH THROUGH THE
OREGON DEPARTMENT OF AGRICULTURE." MARK V.
SHEEHAN AND JOHN G. GAMON, OF THE WASHING-
TON NATURAL HERITAGE PROGRAM, WILL TALK
ON: "NATURAL HERITAGE PROGRAMS AND THE

IDENTIFICATION OF DATA NEEDS FOR ENDANGERED SPECIES MANAGEMENT."

OTHER SPEAKERS ON THE PROGRAM WILL DISCUSS
THE PECULIAR BIOLOGICAL PROPERTIES OF RARE
AND ENDEMIC PLANTS; AND THE TYPES OF
GENETIC AND MOLECULAR-BIOLOGICAL RESEARCH
THAT CAN GIVE IMPORTANT INSIGHTS ON THE
NATURE OF ENDANGERED SPECIES.

IN ANOTHER PART OF THE AAAS PROGRAM WILL BE
A GROUP OF SHORTER SCIENTIFIC PAPERS THAT
DESCRIBE STUDIES BEING DONE ON PARTICULAR
RARE PLANT SPECIES OR ON AREAS IN THE
NORTHWEST THAT ARE RICH IN SUCH PLANTS.

ANYONE WISHING TO ATTEND THESE MEETINGS CAN
GET FURTHER INFORMATION BY WRITING TO DR.
K. L. CHAMBERS, C/O DEPARTMENT OF BOTANY,
OSU, CORVALLIS, OR 97331. PERSONS WHO
ATTEND THE AAAS MEETINGS AND WHO REGISTER
FOR THE SET FEE OF \$32, MAY HEAR OTHER
SCIENTIFIC SYMPOSIA; SESSIONS OF PAPERS IN
MANY FIELDS OF SCIENCE, PUBLIC LECTURES,
OTHER SPECIAL EVENTS; AND FIELD TRIPS (FOR
WHICH TRANSPORTATION COSTS ARE SEPARATE).
THE PERIOD OF THE MEETINGS IS JUNE 18TH
(DAY OF REGISTRATION) THROUGH JUNE 22ND
(FIELD TRIP DAY).

CALYPSO BULBOSA

The orchid *Calypso bulbosa* grows in the boreal and temperate regions of North America and Eurasia. It can be found at coastal sites, among mosses in cool moist coniferous forests, or on subalpine slopes. *Calypso*, a monotypic genus, has four varieties: *bulbosa* in Eurasia, *japonica* in East Asia, *americana* in the eastern United States and most of Canada, and *occidentalis* in the western United States.

When Linnaeus first discovered the orchid in Sweden, he believed it belonged to the *Cypripedium* because of the shoe-like labellum and gave it the name of *Cypripedium bulbosum*. This specific epithet refers to the bulb-like underground stem called a corm. In 1805 Salisbury, a British botanist, introduced the orchid to England, and later established it as a separate genus, renaming the species *Calypso borealis*.

Calypso was the Greek goddess in Homer's *Odyssey* who became enamored of Ulysses when he was shipwrecked on the shores of her island, which was invisible to navigators. Through her powers of fascination, she kept Ulysses there for seven years before he finally returned to his wife and son. Perhaps the name suggests the irresistible charm of this flower for the orchid enthusiast or, as others have suggested, its near invisibility among the moss and litter of the dim forest habitat.

In 1842, Oakes, an American botanist, corrected the orchid's name to *Calypso bulbosa*. Some of the common names are Northern Calypso, Hider of the North, Fairy Slipper, Venus Slipper, Cynthia, and Moor's-head Orchid.

Calypso bulbosa var. *occidentalis* is one of the earliest blooming spring flowers, pushing through the dead leaves, twigs, and other litter of the forest floor as soon as the winter snow has melted, yet it can also tolerate the high temperatures of the coniferous forests during the summer months.

The orchid begins its life cycle in late summer by producing, from the fleshy corm near the surface of the ground, a solitary dark green leaf, approximately 6 cm. long by 4 cm. wide, which winters through. This leaf is long-stalked, roundish in shape, strongly ribbed, and somewhat crinkly.

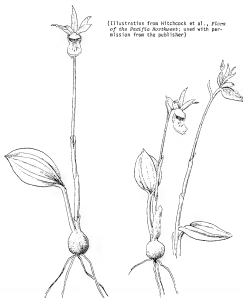
The next spring the corm produces an erect purplish scape, and the leaf gradually withers. Sheathed below by two or three membranous leaf scales, the scape is surmounted by an erect colorful bract, from the base of which springs the flower on a slender drooping pedicel. The height of the plant is approximately 20 cm.

The sepals and petals of the flower are all alike, ascending, narrow and pointed, rose-purple or pink, suggesting the spread fingers of an uplifted hand. Below these puts out the convex top of the wide-winged column, also rose-pink, suspended like a canopy over the lip.

The pendant lip is large, shaped somewhat like a shoe with a long tapering toe, and is bicornate at the apex. In accidentally three "horns" are pronounced. The whitish lip is vividly marked on the sides and on the inner surface with reddish brown spots and lines, and with several rows of hairs on the top surface. The hairs are white on a brown-spotted lip. There are four very pollinia, in two pairs, sessile on a square gland.

The root system of the orchid is shallow, and there is some evidence of an obligate mycorrhizal relationship, either in the seedlings or in the adults, or both. More research is needed on this aspect of the orchid's life history.

Calypso bulbosa is a generalized food-flower mimic. Though self-compatible, autogamy does not occur. Instead the orchid is pollinated by a variety of bumblebee species, even though it provides no reward. The bright pink coloration reflects ultraviolet light, and the flower has fragrance, especially in its early bloom, but no nectar. In fact, there has been some dispute over the presence of fragrance in *Calypso* orchids; observers in Washington claiming no fragrance while those in Oregon claim a "spicy" perfume. Recent studies



(Illustration from Hitchcock et al., *Flora of the Pacific Northwest*, used with permission from the publisher)

Calypso bulbosa

Native Plant Society of Oregon Guidelines & Ethical Code

GENERAL GUIDELINE: THINK TWICE. USE DISCRETION. A PLANT IN PLACE IS WORTH TWO IN THE HAND. LOVE THY FLORA.

I. CHAPTER GUIDELINES

- 1) Know your rare, threatened and endangered species. Know your fragile environments and unique biotic communities.
- 2) Be alert to threats to native plants and their habitats. Appoint watchdog committees to keep aware of these threats and inform the chapter.
- 3) Take action to protect native plants. Work with all groups and the general public to protect native plants and their habitats. Be prepared to salvage plants where they are threatened by outright destruction. Help eradicate particularly aggressive and successful exotic plants that threaten native plants. Take responsible outings.

- 4) Educate your members and the public about native plants, and encourage them to use good judgment in the study, enjoyment, and use of native plants.
- 5) Encourage your members to grow native plants only from seeds or cuttings.

II. OUT THERE AMONG THE PLANTS

- 1) Outings for whatever purpose must never endanger a plant population. Encourage nondestructive modes of learning and enjoyment: photography, artwork, scientific description, aesthetic prose and poetry, and so on.
- 2) On group outings (field trips, conservation activities, class field studies), group leaders must take responsibility for protecting native plants from the activities of the group. All participants should understand the goal of plant protection, the purpose of the outing, and the means by which they can make the least impact on plants and the natural habitat.
- 3) Know where endangered species are growing and plan outings with this knowledge in mind.
- 4) Respect private and public property. Do not trespass. Know the regulations for use of the land and natural resources--public or private--your group is entering.
- 5) Respect the habitat as a whole. Avoid disturbing wildlife, such as nesting birds and nesting hornets.
- 6) Be sensitive to the human foot as a threat to plants. Visits to fragile environments should be carefully planned. Students should be given adequate direction by their instructor, and excessive collecting should be discouraged. Better one person enter a fragile area to identify a plant than the whole group.
- 7) Collecting should be considered only when identification cannot be made in the field

or when it will contribute significantly to educational or scientific objectives. Collecting for whatever purpose should be done as inconspicuously as possible. Casual observers may not understand the reasons for collecting and may feel license to do likewise.

- 8) Collecting must never endanger a plant population. Collect seeds or cuttings in preference to whole plants. Do not collect underground plant parts except for identification purposes. Avoid excessive collecting: this calls for exercise of good judgment by the collector. Consider the use of rules of thumb for judging whether to pick or not to pick. Encourage group study of one specimen. Consider using weeds, garden species, or lab-grown specimens for educational purposes.

III. USING NATIVE PLANTS

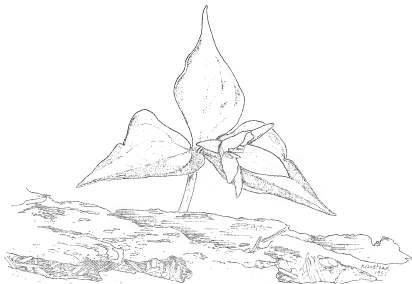
- 1) Use of native plants--in wildflower shows, plant sales, and horticulture--must never threaten their populations.
- 2) Native plant species for sale should be obtained by salvage, seeds, or cuttings--in that order of priority--and whole plants should never be dug up, except for salvage. Seeds should not be wild. Growers must exercise discretion in collecting seeds and cuttings to avoid endangering plant populations.
- 3) Native plants for sale should state on the label how obtained or grown. Chapters should consider certifying commercial growers who follow good ethical practice, and should urge the public not to buy unless plants were obtained or grown according to these guidelines.
- 4) The sale and use of particularly aggressive and successful exotic plant species, such as gorse, broom, and pampas grass, should be discouraged.
- 5) Salvage of native plants should be encouraged when their destruction is certain: at quarries, mines, dams, building construction sites, road construction sites. Salvage is not necessarily called for, however, on logging sites, some recreational areas, and rangeland. Salvaged plants should be kept potted long enough before sale to ensure that they will survive the shock of transplant.
- 6) Wildflower shows should make maximum use of their educational potential. Inform the public of the goals of NPSO: explain the guidelines your chapter follows in studying, enjoying, and using native plants--including guidelines followed in collecting for the show; consider using all other educational options (slides, artwork, publications, herbarium collections, news media, etc.); and continue the educational "life" of display materials after the show by donating them to schools, libraries, or other constructive uses.

With the first flush of flowers decorating Oregon's deserts & forests, it seems appropriate to remind ourselves that NPSO's *raison d'être* are conservation & understanding of Oregon's native flora. Although many of our members are interested in gardening with native plants, NPSO is not a garden club. Our Code of Ethics clearly does not condone the collecting of plants for personal use. This does not preclude growing plants from seed or carefully gathered cuttings. And if the seeds don't sprout, and the cuttings don't strike, the parent plant will still be intact in its wild home.

It is an unfortunate reality of the 80's that effective conservation must be accomplished in the political arena, because the decisions affecting the future of native plants are made by city officials, county commissions, and state & Federal agencies. It is especially important that, as NPSO enters the political fray, we keep our noses clean so no one can accuse our members of being threats to the flora we purport to save. After all, the act of joining NPSO implies tacit approval of its aims.

With NPSO-sponsored flower shows coming up, let's do our best to use the plants to their fullest. Invite special groups in for pre- or post-show educational programs. Advertise! Make sure copies of NPSO's Code of Ethics are posted around the show hall, so visitors come away with the right feeling about our organization. When everything is done, return those plants which can be returned (bulbous & rhizomatous plants, etc.), and make good pressed specimens of those which cannot. This means careful pressing and good label information about the site where the plant came from. When dry, the plants should be donated to a state herbarium. Little or no plant material should end up in the garbage.

Enjoy plants where they grow--you'll never see them in better surroundings than the places they call home.



Trillium ovatum
Drawing by J.R. Kierstead

**BOOK REVIEW: EAGERLY-AWAITED GUIDE TO
IRON MOUNTAIN FLORA BY ROSS & CHAMBERS
NOW AVAILABLE**

Wildflowers of the Western Cascades by Robert A. Ross and Henrietta L. Chambers, with drawings by Shirley A. Stevenson. March, 1988. Timber Press, 9999 SW Wilderness, Portland 97225. 142 pp., 182 color photos in 64 plates, over 100 line drawings, 6" X 9", softcover, ISBN 0-88192-078-9. Price \$19.95 plus \$3.00 shipping and handling for the first book, \$2.00 for each additional copy.

Those of us who knew that Robert Ross and Henrietta Chambers of Linn Benton Community College had been writing a flora of Iron Mountain have been eagerly awaiting the book's appearance, and now here it is, just in time for the spring wildflower season! Hurry to your bookstore for this beautifully-illustrated flora of one of western Oregon's most diverse wildflower areas. Ross and Chambers (Henrietta's husband is Kenton L. Chambers of OSU) and illustrator Shirley Stevenson have given us a most handsome and useful volume that will not only brighten our bookshelves and coffee tables but which can easily be carried into the field in pack or large pocket.

I am enthusiastic about a great many of the book's features. First of all, the 182 colored photos by Robert Ross are stunning. From the close-up of *Claytonia lanceolata* on the front cover to the gorgeous habitat shot featuring *Rhododendron*, *Cornus canadensis* and bear grass on the back, the photographs are a visual delight, with details of flower structure crisp and clear and colors bright and true (I understand the color separations were done in Japan!).

I also applaud the authors' organization of the volume. They begin with a 13-page introduction which gives the reader or Iron Mountain visitor a feel for the ecology of the site and an understanding of how the heterogeneous terrain is responsible for wildflower diversity. Hikers will also appreciate the map of Iron Mt. and environs. The remainder of the book is devoted to descriptions of over 270 species of Iron

Mountain flowering plants, arranged alphabetically by family. Most species are illustrated with a colored photo or a line drawing. Species descriptions include: type of plant, height, leaf shape, flower size and color, inflorescence type, fruit and seed characteristics and flowering time. To help explain the vocabulary, there is a 10-page illustrated glossary. Also included, to my delight, are notes on pollinators and chemical properties of some species.

I am especially pleased that Ross and Chambers chose to organize the species by family rather than by habitat or color. The taxonomic organization makes the book much more valuable as a teaching aid by bringing together species which share family and generic characteristics. I am disappointed however, that no key to the families was included; I think that would have been helpful, especially to students.

The many black and white line drawings by Shirley Stevenson show a nice feel for the main characteristics of the plants. Although Stevenson is no Jeanne Janish or Linda Vorobik, her drawings are lively and may give the pleasant impression of having been done from living specimens rather than herbarium sheets. I did find it difficult in some cases, however, to tell from the drawings how many stamens were present, where these were attached, and whether the petals were free or united.

Ross and Chambers' plant descriptions are excellent and in many cases downright fascinating. For example: A student in my class recently asked how the ancient Greeks came to name *Dioscorea* ("naive gods"), when they had never seen this strictly North American genus. Well, I found the answer to that conundrum on page 86, and if Bulletin readers also want to know, you will find that and much more to delight and instruct you in Wildflowers of the Western Cascades.

Rhoda Love
April 6, 1988

NPSO Pin and Poster Update

There are only two dozen Silver Anniversary NPSO pins left. They are still only \$2.00 each. Checks should be made out to NPSO and sent to Susan Kofahl, Box 153, Mosier, OR 97040.

Likewise, you can obtain a "Wildflowers of Oregon" poster by mailing \$4.95 per poster (including postage) or if you in lots of 10, they are \$3.00 each plus postage. Both items make lovely Spring birthday presents or thoughtful graduation gifts for any budding botanist. Order now while supplies last. Orders will be served promptly, generally within 3 days of receipt, on a first-come first-served basis.

NEWS OF OUR FRIENDS

Two of NPSO's friends in Salem, Martha Pagel and Phil Keisling, are in the news. Martha, as Deputy Director of the Division of State Lands during the 1987 legislative session, was instrumental in negotiating a compromise between proponents and opponents of the state endangered species bill. Martha was recently appointed to the directorship of the Division.

Phil Keisling, who as Legislative Analyst for Speaker of the House Vera Katz also worked very hard to bring proponents and opponents of SB533 together, is now running for state representative in District 12 of southeast and southwest Portland.

Corvallis

Jonathan Diehl

Emerald

Dave Marenklohn

High Desert

Melcolm Boular
Bill Hopkins
Marcel Sandoz

WELCOME NEW MEMBERS

Portland

Thomas Chereck Jr.
Becky Garrett
Gary Stebbins

Siskiyou

Teresa Montgomery
Richard Sorensen

Willamette Valley

Roger Banks

Wn. Cusick

Jean Findley

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Tishier Hedberg, Russ Shuman, Gene Cross
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Conservation Chair Ed Silverman
Dept. of Botany, OSU, Corvallis, OR 97331 754-4106
Legislative Chair Esther Palmer
1200 SW Williams, Corvallis, OR 97331 754-2843

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Buckingham, OSU, Corvallis, OR 97331 754-4106
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2621 Harris St., Eugene, OR 97405 344-7912
High Desert (Hood area) Jojoen Kern
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Mt. Columbia Keith Gramer/John
7005 Midway Creek St., OR 97021 478-3114
North Coast Clara Pfeiffer
1200 Midway Creek St., OR 97021 478-3114
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1430 Barton Road, Turner, OR 97782 764-2609
Dr. Chuck (LaGrange area) Randal Smith
304 E. Ave., LaGrange, OR 97850 764-0404

MEMBERSHIP

Membership Chair Mary Falconer
7120 Engel Ave. N., Salem, OR 97304 254-1419
Memberships in the Native Plant Society of Oregon is open
to all. Membership applications & changes of address
(including old address & my note) should be sent to the
membership chair.

BULLETIN

Editor Don Jones
2012 SW Arthur Ave., Portland, OR 97201 504-2012
The NPS Bulletin is published monthly. Copy is due by
the 15th of the month to be sent to the editor.
News, articles, photos, drawings, & non-copyrighted
materials are welcomed.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not literary; therefore typed,
camera-ready copy is much appreciated. But
no submission will be rejected because it is
not typed. Please proofread & check facts.

FORMAT: 10th of each month

FORMAT: Copy should be typed in 4x inch wide
columns, of any length. Author's name & address
application (for other organizations) are
typed at the end of the article. There is no
standard paragraph treatment; one of these
is suggested:

* for long articles, double space between
paragraphs, but do not indent the first
word of the paragraph

* for short articles or short paragraphs,
when double spacing looks odd, indent
the first word of the paragraph instead

Type your own headings, centered, all caps.
In case of special formats, e.g. plant keys,
you are free to choose the layout.

WRITING: For each submission, provide

* title
* author(s) - specify whether byline is desired
for each item

* Instructions as to whether item is to be
used in entirety or excerpted at editor's
discretion

* assume & date if item is not original

ILLUSTRATIONS: black & white prints, ink
drawings,
unlabeled &
efforts.
original.
SCIENCE
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where po
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Please use
requests

The Bul

2012 members & the public. Your suggestions
& comments are always welcome.

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NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

CHAPTER (if known)

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (Home) _____ (work) _____

IS THIS A CHANGE OF ADDRESS? If so please
write your OLD ADDRESS:

CITY _____ STATE _____ ZIP _____

* **DUES** include monthly news bulletin. Full membership runs from January through December. Quarter membership runs from September through December.

() NEW	() QUARTER MEMBERSHIP (\$2.50)	() RENEWAL
() Student \$ 7.50	() Sustaining \$ 25.00	
() Regular 10.00	() Patron 100.00	
() Family membership 15.00	() Life member 500.00	

* **CONTRIBUTIONS:** Jean Davis Memorial Award Fund . . . \$ _____
Rare and Endangered Plant Fund . . . \$ _____

*All contributions to the Native Plant Society of Oregon, a non-profit organization, are tax deductible.
Please make checks for dues & contributions payable to NATIVE PLANT SOCIETY OF OREGON. Send completed form
& full remittance to: MARY FALCONER, NPSO MEMBERSHIP CHAIR, 1920 Engel Ave. NW, Salem, OR 97304.



Native Plant Society of Oregon
2584 NW Sawyer Street
Portland, OR 97210

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To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

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CHAPTER NEWS

IMPORTANT NOTICE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine so proper dress and footwear is essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage and terrain. You participate at your own risk. Bring water and lunch.

Blue Mountain

11 June, Sat.

Field trip to Olive Lake. Meet at BMCC Greenhouse at 7:30am or at the 395 Junction west of Ukiah at 8:30am.

19 June, Sun.

Field trip to Skyline Drive. This is a long day's trip on a sometimes rough gravel road from Jubilee Lake into Washington State. Meet at BMCC Greenhouse at 7:30am or at 8:30am at the turnoff to Jubilee Lake in Tollgate. Leader Bruce Barnes (276-5547).

Corvallis

13 June, Mon.

Meeting, 7:30pm, Room 4083, Cordley Hall, OSU, Corvallis. Dan Luoma will show slides and talk about "Iron Mountain/Echo Mountain Field Trip Preview".

Emerald

4 June, Sat.

Field trip to search for the Spring Phacelia, *Phacelia verna*, with Charlene Simpson in the Lowell area. Depart South Eugene High School parking lot, Patterson & 19th, at 10:00am. Contact Charlene (w: 686-3221, h: 465-1059) for more information.

13 June, Mon.

Meeting, 8:00pm, Amazon Community Center, 2700 Hilyard St., Eugene. "A Hike Up Kilimanjaro." Naturalists Carol Savonen and Peter Zika will describe their ascent from the thorn savanna and rain forest up to the snows of this African Mtn.

- - - - (Aug.)

(Dates to be announced.) Lane County Fair. Our Chapter has always had a booth in the Floral Display Building at the Fair. Volunteers are needed to set up and man the booth during the festivities. Fair entrance tickets are provided free to volunteers and the Chapter receives money for participating. Please contact Nadine Smith (344-6478) to help in any capacity. It is always fun and important educational opportunity for NPSO.

18 June, Sat.

Field trip up Iron Mtn. trail. Depart 8:00 am from So. Eugene High School or meet at trailhead at 10:00am. Leader is Dan Luoma (758-8063). Joint trip with Corvallis Chapter. Gail Baker (344-0312) is in need of a Eugene contact person for this trip. The time is too near her baby's due date for her to go. If you plan to go on the trip, please consider acting as the "organizational leader" from Eugene to the trailhead. Contact Gail.

9 July, Sat.

Field trip to Elk Meadows, a BLM Research Natural Area at 4000' on border of Lane & Douglas Cos. We'll see *Sidalcea cusickii* & *Frasera yonagensis*. BLM botanist, Peter Zika will lead (687-6691 days, 896-3853 eve. before 9pm). Depart SEHS at 9:30am.

High Desert

- 4 June, Sat. Field trip to Ochoco/Big Summit Prairie. Easy hiking and a fair amount of driving. We'll carpool in Bend at the McDonalds Restaurant, 2045 NE Third at 8:30am sharp, and meet others at the leader's (Christy Steck 447-4693) home on Ochoco Reservoir.
- 9 July, Sat. Field trip to Cultus Creek/Many Lakes. This proposed RMA off Century Drive is scenic and has old growth pine and spruce. Large springs and bogs are of interest. Moderate hike of 2 miles. Leader is Bill Hoskins (389-3330). Depart 8:30am from McDonalds Restaurant in Bend.
- 16 July, Sat. DATE CORRECTION. Field trip to Iron Mountain, a classic Cascades wildflower hike of 6 miles on a good trail. Leaders are: Marge Ettinger (382-2255) and Julie Robertson (388-1903). Depart from McDonalds Restaurant at 8:30am.
- 13 Aug., Sat. Field trip to Broken Top. An annual trip to see a spectacular display of alpine wildflowers. A 5 mile moderate to strenuous hike with a 1500 ft. elevation gain. Leader Stu Garrett (389-6981). Depart McDonalds at 8:30am.

Mid Columbia

- 1 June, Wed. Meeting, 7:30 pm at the Mosier School. Selected slides of NW native plants from the private collection of Dr. John Hammond, donated to the Berry Botanic Garden.
- 4 June, Sat. 2nd Annual Knapweed Pull on the Tom McCall Rowena Nature Conservancy Preserve. Starts at 9:00am. Bring gloves, hand tools, and lunch. Hike to the hilltop in the afternoon and/or return to Susan Kofahl's home in Mosier for refreshments.
- 6 July, Wed. Meeting, 7:30pm at the Mosier School. "A Lomatium Extravaganza." Ethnobotanist Gene Ham from the University of Washington will present a program with slides on our various native Lomatiums. Samples will be discussed and species determinations made.

North Coast

- 2 June, Thur. Meeting at 7:00pm in the State Office Building, 3600 Third St., Tillamook.
- 18 June, Sat. Field trip to Nehalem Bay State Park. Meet at parking lot of the FUD, Tillamook 10am.
- 7 July, Thur. Meeting at 7:00pm in the State Office Building, Tillamook. For information, contact Clarice Maxwell (842-7023).

Portland

- 4 June, Sat. Join Mid Columbia Chapter for the 2nd Annual Knapweed Pull on the Tom McCall Rowena Nature Conservancy Preserve. Leave the Gateway Park-&-Ride at 8:00am or arrive at Rowena at 9:00am. Bring gloves, hand tools, and lunch. Afternoon hike to hilltop if desired and/or return to Susan Kofahl's home in Mosier for refreshments.
- 11 June, Sat. Field trip to Starvation Creek. Call Vance Terrall (281-2119) or Shep Wilson (228-7823) for details.
- 18 June, Sat. Field Trip to Saddle Mountain at the coast. Leave Zoo-MSI parking lot at 9:00am. May need rain gear. Bring lunch. Leaders are Vance Terrall (281-2119) and Virginia Hegal (645-1344).
- or
Friends of the Columbia Gorge Hiking Weekend trip to Multnomah Bog on Larch Mtn. with Elizabeth Handler (244-5320) and Esther Kennedy (287-3091).
- 14 June, Tues. Meeting, 7:00pm. First United Methodist Church, 1838 SW Jefferson St., Portland. George Lewis will show us pictures of plants that we're not apt to see often.
- 26 June, Sat. Annual Meeting at Silver Creek Falls State Park. Three field trips available to registrants. Write Willamette Valley Chapter for details: HP30, PO Box 68, Salem, OR 97309.
- 2-4 July
July 4th Wkend. Field trip to Orcas Island. Barb Fox is leading this trip to the San Juan Islands. If interested, send her a postcard (11455 SE 35th, Milwaukie, OR 97222). Be sure to include your phone number.
- or

Field trip to Siskiyou Mtns., Dutchmans Peak. Overnight camping trip two nights, so be prepared with food, shelter, cooking gear, etc. Meet at Rich, Oregon country store

at 1:00pm on Sat. July 2. To get to Rich, take I5 to Grants Pass, then Hwy. 238 to Murphys, Frevolt, Applegate, Rich; or leave I5 at Gold Hill exit, then south to Jacksonville and Rich - 7 miles south on Hwy. 238. Call George Lewis (292-0415) for further details and plans.

- 9 July, Sat. Field trip to Wahtum Lake, Anthill Trail. two and one-half miles or longer if desired. Leave Gateway M&M Park-and-Ride at 8:00am. Regroup at Hood River Inn (Now Mendels) at 9:30am for drive to Wahtum Lake. Leaders: George Joffcott and Herb Armentrout (658-4751).
- 16 July, Sat. Field trip to Monument Peak. Leave K-Mart parking lot in Tualatin at 8:00am. (Exit off Salem Freeway - I5, turn right and right again. Leader: Bryan Boyce. Contact Vance Terrall (281-2119) for further information.

Siskiyou

- 9 June, Thur. Potluck Picnic Get-Together: 6:00pm in Lithia Park, Ashland. Gather in the picnic grounds across the creek from the upper duck pond. Bring something to eat or drink and share with others. This will be followed by:
- Meeting at 7:30pm. Room 171, Science Building at SOCC. Peter Zika will present "Flora of Northern New England."
- 25 June, Sat. Field trip all day to Bear Camp and Burnt Ridge Botanical Interest Area on Siskiyou National Forest. Led by Veva Stansell, renowned for her knowledge of the Siskiyou flora. Good opportunity to see Pensacellia oregona, Fraxinus umongensis and many other unusual plants. Jackson County meet at Medford's K-Mart parking lot at 8:30am. Josephine County people meet at the Sontay Market in Merlin at 9:20am rendezvous.
- - - - (July) No meeting until September, see next month's announcements.
- 24 July, Sun. Field trip to Mt. Zady. Anyone interested in making this trip into a weekend campout, call Wayne Hollis (482-0093).

Willamette Valley

- 4 June, Sat. Field trip to Mary's Peak (moderate, $\frac{1}{2}$ mile hike to summit). Carpool at 8:00am at South Salem K-Mart. Leader: Janet Skirrow (363-5621).
- 11 June, Sat. Field trip to Suttle Lake (easy, 2-mile hike). Carpool at 7:30am at South Salem K-Mart or meet at Suttle Lake Methodist Youth Camp at 10:00am. Leaders: Hilbur Elum (393-2934).
- 18 June, Sat. Eighth Annual Columbia Gorge Hiking Weekend. Twenty easy or moderate hikes. Ask at Salem Public Library or call Clint Urey (743-2802) for details. Three particularly good hikes for wildflowers should be: Mulhonnath Marsh, below Larch Mtn. (easy hike), Catherine Creek, near Lytle, WA (easy), and Eagle Creek (moderate).
- 25 June, Sat. Field trips in conjunction with the WPGU Annual Meeting at Silver Falls State Park. Leave at 9:00 am from Silver Falls Conference Center. (Meeting registration of \$5.50 includes participation in field trips--can be paid in advance or to trip leaders). Trips: (1) The Flora of Silver Falls St. Park; (2) Grasslands remnants and vernal pools of Willamette Valley and foothills. If demand and bloom are sufficient, there will be a third trip to Henline Mt.
- Special Note: Unscheduled Mid-Week trips will be arranged by telephone tree, depending on weather, season, and interest. To sign up, call Clint Urey (743-2802) or Glenn & Barbara Halliday (371-1025).

Wm. Cusick

- - - - For information, contact Rachel Rines (963-0674).

BULLETIN SCHEDULE ALTERED THIS SUMMER

Production schedules during the summer will cause the August Bulletin to be printed about a week later than normal. It may not reach members until the second week of August.

Field trip and program chairpersons should submit their early August event information by June 10 deadline for publication in the July issue.

Two Columbia River Gorge Books Published

Wildflowers of the Columbia Gorge: A Comprehensive Field Guide, by Russ Jolley, includes 744 flowering plants, grouped by plant family. There is a guide to blooming seasons, and a fold-out map showing where to see the flowers. Published by Oregon Historical Society Press, the book is 348 pages with nearly 750 color photographs. Paperbound, 5 x 8 inches. \$19.95.

Columbia River Gorge, photography by James O. Holloway, includes 72 color photographs in a large-format book. Introduction, flora and fauna text, and captions are by Jean Siddall. Historical text is by David Kelly. Geological text is by John Eliot Allen. \$24.95.

JULIE KIRSTEAD RECEIVES CHEVRON CONSERVATION AWARD

Julie Kirstead has received a 1988 Chevron Conservation Award for her work as conservation coordinator for the Berry Botanical Garden.

The major activities which earned her this recognition were her "pivotal role" in passage of the Oregon Endangered Species Act, and her plant conservation efforts as director of the Seed Bank for Rare and Endangered Plants.

21 individuals and five organizations were honored by these awards, presented May 18 in Washington, D.C.

The Chevron Conservation Awards Program was founded in 1954 by Ed Zern, nationally prominent outdoor writer, and sponsored by Chevron since 1986.

IT'S T-SHIRT WEATHER

If you haven't purchased a Native Plant Society T-shirt, or would like to get another. Check the list below to see what we have available.

T-shirts are 100% pre-shrunk cotton. Please indicate the size, color and number desired. Include \$1.00 each for postage. Make checks payable to the Native Plant Society of Oregon. Mail order to Nadine Smith, 1128 Jackson, Eugene, OR 97402

Short sleeve T-shirts

NPSO emblem (green ink on white)	3 L 1 XL
<u>Opuntia polyacantha</u> gray	1 S 3 L 2 XL
<u>Salicaria racemosa</u> light blue	6 M 2 L
<u>Delphinium californicum</u> lilac	1 S 2 XL
<u>Delphinium leucophaeum</u> teal	2 S 2 M
<u>Lomatium cookei</u> yellow	3 S 2 M 2 L

Long sleeve T-shirts

<u>Opuntia polyacantha</u> white	1 S 4 M 3 L 1 XL
<u>Opuntia polyacantha</u> gray	1 S 2 M 1 L 1 XL
<u>Opuntia polyacantha</u> lilac	1 XL
<u>Opuntia polyacantha</u> red	1 M 2 L
<u>Salicaria racemosa</u> light blue	1 M
<u>Erythronium oregonum</u> yellow	1 M 3 L

Sweatshirts

<u>Cornus canadensis</u> teal	5 L 1 XL
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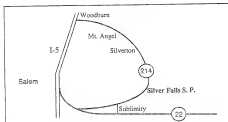
NPSO T-shirts \$6.25

All other short sleeve T-shirts \$7.00

Long sleeve T-shirts \$10.00

Sweatshirts \$16.00

NPSO BOARD MEETING
Main Meeting Hall,
Silver Falls Conference Center
20024 Silver Falls Highway (214)
Sublimity, OR 97385
Sunday, June 26, 1988 9 a.m.



From the north, take the Woodburn exit off I-5 and follow Highway 214 thru Mt. Angel and Silverton to Silver Falls State Park. From the south, take the Santiam Highway (22) exit off I-5 to the Silver Falls Highway (214). Those coming from the east on Highway 22 should exit thru Sublimity to Highway 214.

Send Agenda Items
to
Dan Luoma

**WARNING: BE CAREFUL WHERE YOU SPEND
YOUR CONSERVATION DOLLAR!**

Salem citizens have recently been receiving telephone solicitations from a for profit company calling itself "Wildflowers for Our Children." Nearly all of the species they intend to plant are not native to Oregon. At this time, there is some question as to whether they have gone through formal channels to get permission from the public agencies who manage the land where they say they intend to plant. "Wildflowers for Our Children" is currently under investigation by the Financial Fraud Section of the Department of Justice and is working with the Department to meet the requirements of the Unlawful Trade Practices Act.

—Willamette Valley Chapter

WILDFLOWER SHOW A SUCCESS

The Willamette Valley Chapter hosted its annual Wildflower show Mothers' Day weekend at Silver Falls State Park. The event was well attended both days despite forecasted rain for Saturday and actual rain on Sunday. The public was treated to a nice display featuring more than two hundred species collected by Chapter members and arranged in family groupings. Most of the plants were natives of the central Coast Range, Willamette Valley, and foothills. Alien species were politely identified as "introduced." Wildflower slide shows were presented several times each day — Don and Priscilla Eastman provided the slides Saturday, and George Schoepert showed his on Sunday. Larry Seofield led several short nature walks for Sunday's visitors. The show is held each year in May, on Mothers' Day weekend, at Silver Falls State Park, 30 miles east of Salem.

— Pat Rogers-Rochina
Willamette Valley Chapter

Wildflowers of the Cascades

Dan Luoma will be teaching a community education class through Linn-Benton Community College in July (M&W starting the 11th, 3 wks.). This will be a "fun" course, designed to introduce students to basic plant morphology and common plant families of the Western Cascades. Ross and Chambers' new book (see the May Bulletin for Rhoda Love's review) will be used to identify the plants encountered on the two Saturday field trips. Call Dan or LBCC at 967-6108 for information.

PORTLAND CHAPTER ELECTS NEW OFFICERS

New officers of the Portland Chapter are:

Esther Kennedy, President
George Lewis, 1st Vice-President (programs)
Vance Terrall, 2nd Vice-President (field trips)
Mary Jane Fredricks, Treasurer
Laura Casaway, Secretary
Russ Jolley, Conservation Chair

FLOWERS IN THE FOREST: A REPORT

Are wildflower displays worth the effort? We thought so, when the doors closed on the Portland Chapter show May 14-15 at World Forestry Center (earlier in the week, of course, as we scrambled through the final stages, there might have been a different answer!).

Attendance totaled 1,470, WFC told us. This is our educational service, WFCG does not collect a show admission. Enthusiastic response, many questions, many compliments, convince us that we have done well. Memberships, posters, pins and cards sold briskly.

Book sales flourished, with Russ Jolley signing "Wildflowers of the Columbia Gorge," and Jim Holloway and Jean Siddall autographing many copies of "Columbia River Gorge."

Nearly 600 identified specimens were on display. The habitat-grouping led to duplication in many cases, such as vine maple on several tables, so the species list would be 500+.

The SMO sign was out for every slide show, by Don Eastman of Willamette Chapter, Russ Jolley (two shows), Steve Casaway, Dave Jobak, Esther Kennedy, Carroll Dubuar, George E. Lewis, Mike Fahy and Vance Terrall.

Handouts included our own chapter brochure, plus extra newsletters, plus the "green sheet" about respecting native plants (thanks to a fast job of revision & reprint by Rhoda Love). At the book display, a reading list was issued. A "don't dig" message with suggested sources of plants and seeds was popular with gardeners.

Sensitive plants were admirably recognized in a large photo display by Jean Siddall including work of 18 other photographers.

Most of the participants were recognized in a special Portland Chapter newsletter, and we can't take space to describe each of the 14 display units, but let us record a few highlights:

The cut end of the Gorge was spectacular, thanks to Keith Chamberlain's arrival from Mid-Columbia. We were honored that Ruth Keen included some of her beautiful herbarium sheets in the Grass-Rush-Sedge display she did with Barb Fox. The board of conifer ID with cones, and an array of galls will both be used elsewhere. The David Douglas showcase will remain in the Forestry Center lobby for a while. People who thought snow was just one kind of green stuff were captivated by the informative and beautiful table that Kimberley St. Hilaire produced.

There was much note-taking and photographing. We learned some things ourselves. One visitor was looking for the "Indian Headdressess." Did you ever hear that one for Shooting Stars or Bird's Bill or Dodecatheon??

It was a lot of work, actually it was a lot of fun, we recommend it highly to another committee next year.

—Jeanne Huffstatter, chairman, Florence Ebeling, Esther Kennedy, Louise Godfrey

PLANT SURVEY: AN OPPORTUNITY

Ever wonder exactly how those plant surveys are made in the national forests? Lois Kemp, botanist in the supervisor's office for Mt. Hood National Forest, is inviting ten of us to participate in a Sensitive Plant Survey in the MHNW on Wed., June 15.

To be one of the ten for this unusual day, off the usual trails, call Lois, 760-4998, evenings.

The registration deadline (May 15) has passed, but we'll still accept registration forms and money until we are booked up.

Ed Alverson's field trip to see Willamette Valley grassland remnants is full. There is still space on the other field trips: 1) Wilbur Elum's exploration of Silver Falls, the largest state park in Oregon; and 2) Susan Egehart and Pat Roger-Hochma's trip to a small, nearby volcanic peak, Henline Mountain. Field trips will meet at 9 am in front of the dining hall, and depart at 9:10 sharp. Field trips will return to the Conference Center by mid- or late-afternoon.

You can look forward to receiving an updated edition of the statewide NPSO membership roster at the annual meeting.

The menu planned for the banquet includes chicken teriyaki, wild rice, stir-fried vegetables, and fresh strawberry pie. We sampled it, and it was delicious! Among the festivities after dinner will be the installation of officers and the giving of grants and awards. We are pleased that Susan Cockrane, coordinator of the State of California Plant Program will give the keynote speech on putting a state threatened and endangered plant law into effect, and how NPSO can help with the Oregon law. She will relate some of their success stories and give us advice on where to use caution.

Dan Lyons has arranged for child and infant care during the banquet and possibly at other times. The cost will be dependent on the number of children involved. Talk to Dan or his wife, Sunny, to make arrangements (758-8063). There is no charge for children who sleep on the floor in their parents' room. If a child sleeps in a bed, he must pay the full adult price. Please let the registration people know if a child will be sleeping on the floor. Neals for children 6 and under are 1/2 price.



PROTECTING ROADSIDE WILDFLOWERS FROM THE HIGHWAY DEPARTMENT -- A HOPELESS CAUSE?

On April 25, I was stopped near NP 5 on the road (US 30) between Mosier and Mayer State Park. I had stopped to see if the *Allium douglasii* had started to bloom in the fields on either side of the road. A few lupines, carnies, balsamroot, and others were in bloom in the highway right-of-way.

An Oregon Department of Transportation truck was approaching from the west, spraying the entire right-of-way on the south side. So powerful was the spray that a considerable amount was projected over the fence onto private lands beyond the right-of-way.

It was a two-man crew, a driver and an operator using a hand-held nozzle. They told me that they were using a soil sterilant and that their instructions from their foreman had been to "spray the right-of-way." Now, soil sterilant is used to eliminate all vegetation from an area and is normally directed into the zone immediately adjacent to the pavement, but this operator was directing most of the spray beyond the ditch onto the outer part of the right-of-way.

I went to the State Highway office in The Dalles to find out who was responsible for this needless and wasteful destruction of roadside wildflowers. Chet Anderson, District Maintenance Supervisor at The Dalles, appeared to be surprised to hear that the entire R-O-W was being sprayed. He confirmed my belief that the operator was supposed to restrict the spray to the few feet next to the pavement.

During my brief conversation with Mr. Anderson, he indicated that he did not, however, sympathize with the Native Plant Society's objective of protecting native wildflowers in the roadside. I responded that at least he could understand our objective, but he again declined to agree.

With this expressed lack of concern for native plants on the part of a highway official responsible for many miles of highway in the east Gorge, the outlook for native plants in this area is not bright. Certainly a lot of damage has been done along both sides of the US 30 route between Mosier and The Dalles. It may take years to recover from the dose of soil sterilant.

Protecting our roadside wildflowers is not a hopeless cause, however. The attitude of Chet Anderson is not typical of most highway officials. Harry Woodward, District Maintenance Supervisor for the west end of the Gorge in Oregon, understands the NPSO position and is willing to cooperate, although we cannot expect protection of wildflowers to be one of his top priorities. We just have to let the highway people know, again and again, that protection of roadside wildflowers is important, especially in the Columbia Gorge National Scenic Area.

Rovenna Plateau Field Trips Every Weekend

NPSO and The Nature Conservancy sponsor field trips on the Tom McCall Preserve at Rovenna every weekend through May 22. Each trip is one-and-a-half hours. Saturday hikes begin at 11 a.m., 1 p.m., and 3 p.m.; Sunday hikes begin at 1 p.m. Meeting place is in the still and large wooden sign just north of the Mayer State Park loop.

CATTLE WRECK POND ON PUBLIC LAND

When the Columbia River Gorge National Scenic Area was created by Congress in 1986, more than a dozen scattered pieces of public land previously administered by the BLM came under Forest Service management as national forest land. One of these is a 60-acre parcel just south of the Dalles Mountain Road, about 1.25 miles from Washington State Highway 14.

On this parcel there is a vernal pond (one which goes dry in mid to late summer). This pond lies about 750 feet from the road. A lot of native plants grow at the pond, including one which is on the Washington Natural Heritage Program list of Sensitive plants, *Meacheroocarpus californicus*, Fringed Water Plantain, which should be blooming in early June.

It should be blooming there in June, but there is no assurance that it will get a chance to bloom this year, because there is a problem, namely, cattle! The cattle trample the plants and convert the edge of the pond to a muddy mess. Since the pond is where they spend most of their time, that is also where they leave most of their manure. Sometimes 20 cattle have been seen standing in and around the pond. Besides the pond, there are other vernal wet areas on this predominantly arid land, including a nice camas patch and a spring area. All the wet areas are laid waste by the cattle.

But there is something quite special about these cows, namely, the fact that they are trespassers! They actually belong on adjacent private land, but since there is no fence around the public land, they wander freely over the latter, eating the public's grass and making a mess of all the wet areas.

This trespass situation has apparently been going on for a good many years. At one time, the adjacent landowner held a permit to graze the public land, but that permit expired years ago. Since that time cattle have been trespassing on the public land. Clearly, the situation cannot be allowed to continue.

One option available to the Forest Service is just to issue a new grazing permit, validating the present situation. The Native Plant Society would strongly oppose this, since continued damage to the wet areas would be unacceptable.

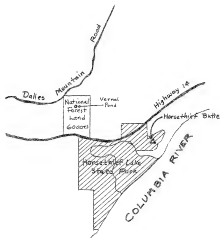
A second option would be to issue a new grazing permit, but to fence the entire 60-acre parcel (now unfenced) and to construct protective fencing around the pond and other moist areas, leaving the balance of the area for grazing. But we are not talking about good grazing land; this is scrubland, miserably poor grazing land, providing only a short season of low quality forage. All this fencing would be a poor in-

vestment, considering the meager benefits to be obtained by grazing the land. NPSC would oppose this option, as well.

A third option - one that NPSC supports - is to get the trespass cattle off the area immediately, fence the west boundary of the national forest parcel, and not issue a new grazing permit. Since the trespass cattle all come from the landowner on the west side, only this side needs fencing. In fact, it is the legal responsibility of that landowner to keep his cattle from trespassing. The fencing operation could be a joint effort by the Forest Service and the west side landowner, with NPSC volunteer workers helping to get the job done. Pending construction of the west side fence, an electric fence could be quickly installed around the pond to protect it from further abuse.

There is very little public land in the east Gorge where people can walk without fear of encountering cattle and manure, and where plants can grow to maturity without risk of being trampled or eaten. This 60-acre parcel should be saved for plants and people.

The status of this problem will be updated in one of the summer bulletins.



ROCK GARDEN SOCIETY MEETING -- JULY 29-31.

The public is welcomed to attend the American Rock Garden Society's annual meeting at Rippling River Resort near Mt. Hood, July 29-31. Among the featured speakers is Lois Kemp.

Registration fee is \$60. Contact Ruth Korn, 3462 Robin View Dr., West Linn, OR 97068, 503-636-5238, for more information.

IN APPRECIATION

Dale Jensen has made the plant labels for the "walkabout" at Leach Botanical Park during the 40 Mile Loop Year celebration. This is as a contribution of the Portland Chapter NPSC, which is most grateful to Dale for his splendid work on this project.

PLANT TAXONOMY IN THE WESTERN UNITED STATES:
AN IMPENDING REVOLUTION?

Botanists working in the Great Basin and central Rocky Mountains are beginning to use scientific names that would be unfamiliar to many wildflower enthusiasts of the Pacific Northwest. Why are these sweeping changes in plant taxonomy being proposed? Although many factors are involved, perhaps a return to the narrower generic concepts of the late nineteenth century is an important one.

Per Axel Rydberg and Edward Lee Greene were botanists working in the western United States during the late 1800s. They often proposed smaller, more narrowly-defined genera than their counterparts at the dominant "eastern establishment" -- Harvard University at Cambridge, Massachusetts. (Asa Gray and Sereno Watson were prominent taxonomists of that era at the Harvard Herbarium.) Rydberg and Greene were designated as "splitters" and considered the "bad guys" of their time by eastern botanists who favored a conservative, "status quo" taxonomy (they were the "lumpers" or good guys). It's interesting that Rydberg and Greene were only advocating a return to generic concepts originally proposed by European botanists between about 1750 and 1850. The European proposals were rejected by botanists who adhered to an artificial taxonomic classification developed by Linnaeus and published in 1753 as "Species Plantarum".

What is the basis for these new scientific plant names? Recent advances in scientific technology and analysis procedures have provided a wealth of biochemical information about plants. Development of the scanning electron microscope, genetic techniques that simplify identification of chromosome numbers, and sophisticated chemical analyses of leaf and twig oils and other plant compounds have allowed taxonomists to base their genus and species determinations on a variety of factors. Although morphological features were historically important for separating genera and species, a "biological genus concept" that incorporates all aspects of plant biology and behavior is now emphasized.

Many professional and amateur botanists dislike the recent changes in plant taxonomy. Some of their dislike is motivated by a desire to maintain the status quo, but much of it is based on emotional or psychological discomfort. After all, how many plant lovers will readily accept their cherished *Caltha leptosepala* (caltha leucanthemoides) being changed to *Psychrophila leptosepala*, or *Cornus canadensis* (bunchberry) going to *Chamaepericlymenum canadense*? And to add insult to injury, obscure latin names that have finally been mastered after years of use are now being replaced with tongue twisters like "*Chamaepericlymenum*". What a fate for the names of familiar friends!

Just how pervasive are the proposed changes? They cover the whole spectrum of vascular plants, but are particularly common in the chickweed (Asteraceae), sunflower (Asteraceae/Compositae), mustard (Brassicaceae), gentian (Gentianaceae), orchid (Orchidaceae), grass (Poaceae/Cyperaceae), saxifrage (Saxifragaceae) and rose (Rosaceae) families. This list

is a small sample of northwestern plants which have recently had new names proposed for them:

Name in Flora of the
Pacific Northwest
(from Hitchcock and
Cronquist 1973)

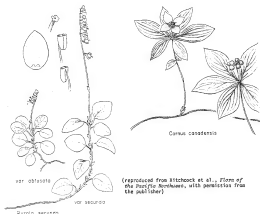
Proposed New Name

<i>Abies lasiocarpa</i>	<i>Abies bifolia</i>
<i>Agropyron scribneri</i>	<i>Elymus scribneri</i>
<i>Arctostaphylos uva-ursi</i>	<i>Arctostaphylos adenotricha</i>
<i>Artemisia campestris</i>	<i>Oligoneuron campestris</i>
<i>Artemisia tridentata</i>	<i>Seriphidium tridentatum</i>
<i>Clematis columbiana</i>	<i>Atragene columbiana</i>
<i>Epilobium angustifolium</i>	<i>Chamerion danielsii</i>
<i>Gentiana calycosa</i>	<i>Pneumonanthe calycosa</i>
<i>Gium triflorum</i>	<i>Ecythrocma triflora</i>
<i>Habenaria hyperborea</i>	<i>Limonchis hyperborea</i>
<i>Haplopappus uniflorus</i>	<i>Pycnocoma uniflora</i>
<i>Hordeum jubatum</i>	<i>Critonion jubatum</i>
<i>Juniperus scopulorum</i>	<i>Sabina scopulorum</i>
<i>Potentilla fruticosa</i>	<i>Pentaphylloides floribunda</i>
<i>Prunus virginiana</i>	<i>Padus virginiana</i>
<i>Pyrola secunda</i>	<i>Orthilia secunda</i>
<i>Rubus parviflorus</i>	<i>Rubacer parviflorus</i>
<i>Saxifraga rhomboides</i>	<i>Micranthes rhomboides</i>
<i>Sedum lanceolatum</i>	<i>Amarocedum lanceolatum</i>
<i>Sitanion hystrix</i>	<i>Elymus elyoides</i>
<i>Smilacina racemosa</i>	<i>Malanthemum amplexicaule</i>
<i>Smilacina stellata</i>	<i>Malanthemum stellatum</i>
<i>Thlaspi fendleri</i>	<i>Noccea montana</i>
<i>Zigadenus elegans</i>	<i>Articles elegans</i>

(Note: This article's historical perspective was adapted from "Colorado Flora: Western Slope" by W. A. Weber, Colorado Ass. Univ. Press, 1987, 630 p.)

David C. Powell

John Day, Oregon (Blue Mountain Chapter)



(reproduced from Hitchcock et al., Flora of the Pacific Northwest, with permission from the publisher)

**Field Key to the Monotropoideae of
California,
Oregon, and Washington**

- 1a. Plants low to the ground at maturity, old stalks not persistent, fruit a berry, seeds attached to inward projections from the berry wall, style and ovary merge smoothly.
- 2a. Petals united, hairy on inner surfaces, flowers in a dense head, usually just emerging from duff, pink when young, fading to straw-colored.
Hemitomes congestum
- 2b. Petals free, flowers in a more elongated raceme, cream to straw colored, elevated somewhat more above the duff.
- 3a. Petals densely hairy within, anther rounded.
Pityopus californica
- 3b. Petals not hairy, margin fimbriate, anthers elongate.
Pleuricospora fimbriolata
- 1b. Plants not low to the ground at maturity, old stalks often present, fruit a capsule, seed attached to a central column, style not evenly continuous with ovary.
- 4a. Plants bright red or red and white striped when fresh.
- 5a. Plants bright red, fading to brownish red, capsule hard and shining, seeds round, about 1 mm, not known north of Douglas Co., OR.
Sarcodes sanguinea
- 5b. Plants red and white striped, pale when emerging and staining green at times, drying to black, flowers open and shallow with stamens exerted.
Allotropa virgata
- 4b. Plants pinkish, to dull orange, to straw colored or brick red-brown.
- 6a. Petals free, flower stalks emerge bent over.
- 7a. Flower stalks with only one flower, white.
Monotropa uniflora
- 7b. Many flowers on a stalk, pink to orange to straw colored.
Monotropa hypophyllis
- 6b. Petals united, stalk emerging erect, usually brick red-brown but may be yellow, tall (may reach 1 m).
Pterospora andromedea



Hemitomes congestum

Hypophyllum monotropae



Monotropa uniflora

This key is presented at the request of members of the Portland Chapter. I had intended it to accompany a write up of "Mysteries of the Monotropoideae", but that won't be done for some time. Unfortunately, readers are left to themselves to figure out what a Monotropoideae is and if a plant of interest might be one. Generally, a monotrope is a member of the henth family (Ericaceae) without chlorophyll (unless you have an achlorophyllous *Pyrola*). If the plant in question has flowers with bi-lateral symmetry (rather than radial symmetry), it is not a monotrope. Other commonly encountered achlorophyllous plants are in the orchid (Orchidaceae), and broomrape (Orobanchaceae) families.

Credit should be given to Dr. Gary Wallace of the Los Angeles County Museum of Natural History for his monograph of the Monotropoideae. His definitive work was published in the Wassman Journal of Biology, vol. 33, 1975. I welcome comments to improve the usefulness of the key. I know how plants often refuse to display the proper morphology when confronted with a key.

Thanks and good luck!,
Dan Luoma

While collecting plant specimens for the Willamette Valley Chapter's wildflower show in early May, I noticed two "listed" species that were just coming into bloom: Sidalcea campestris, the Meadow sidalcea, and Lathyrus holochlorus, the thin-leaved peavine. Both of these are most commonly seen as roadside fence-row plants these days, in remnants of Willamette Valley prairie plant communities.

In my experience, the Lathyrus is usually in shrub thickets, nestled in among Poison oak (Rhus diversiloba), snowberry (Symphoricarpos alba), and wild rose (Rosa nutkana). Although often occurring in the same general vicinity, the Sidalcea is generally found in more open, grassy places. In fact, I have seen it in areas completely burned the previous summer by field fires that consumed roadside and ditch vegetation in addition to their prescribed area.

Sidalcea campestris is the palest of northwest Oregon sidalceas — pale pink to almost white. It bears its flowers in spike-like racemes on stalks two to six feet tall. Lathyrus holochlorus flowers are pale orange to creamy yellow, with tinges of green. It is the only legume of that color blooming in May in northwest Oregon. (Vicia gigantea is also orange-flowered but blooms later in the year.) The plants are one to three feet tall, but are often entangled in or supported by other plants.

Because of their size, habitat, and distinctive coloring, Sidalcea campestris and Lathyrus holochlorus can often be seen and tentatively identified from a car at normal driving speeds. An even better way to enjoy looking for these plants is by bicycle. As you read this in early June, it is probably not too late to find them in bloom along the rural roads of Marion, Linn, Benton, and Polk counties at low elevation. Plan your ride in the Seilo and Crabtree area and you can search for these plants while enjoying some flat, lightly-travelled roads and admiring some of Oregon's few remaining covered bridges as well.

— Pat Rogers-Roehna
Willamette Valley Chapter



Drawing by Arlene P. Sommerly, from *Northeast Oregon*, by Stephen F. Arno & Arlene P. Sommerly, The Mountaineers Books, Seattle.

State Officials

Governor
Neil Goldschmidt*
254 Ross Campus
Salem, Oregon 97310
(503) 378-3111

Federal Officials

President Ronald Reagan
White House
1600 Pennsylvania Avenue
Washington, D.C. 20500
(202) 456-1414

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(202) 224-5244 or (503) 221-3370

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(2nd District)
House Office Building
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Congressman Peter DeFazio
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Membership in the Native Plant Society of Oregon is
open to all. Membership applications, renewals and
changes of address (including old address not ship return)
should be sent to the membership chair.

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Editor Jan Sakak
2041 Gortner St., Portland, OR 97215; 246-9122

The 1990 Bulletin is published monthly. Copy is due by
the 10th of the month & should be sent to the editor.
Text, pictures, charts, drawings, & non-copyrighted
material are welcome.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typewritten; therefore typed,
camera-ready copy is most appreciated. But
no submission will be rejected because it is
not typed. Please proofread & check facts.

DEADLINE: 10th of each month
FORMAT: Copy should be typed on 4 1/2 inch wide
paper, of any length. Author's name & chap-
ter affiliation (or other organization) are
typed at the end of the article. There is no
standard paragraph treatment; one of these
is suggested:

* for long articles, double space between
paragraphs, but do not indent the first
word of the paragraph

* for short articles or short paragraphs,
when double spacing looks odd, indent
the first word of the paragraph instead
type your own headings, centered, all caps.

In case of special format, e.g. plant keys,
you are free to choose the layout.

ABBREVIATIONS: For each abbreviation, provide

* title

* author—specify whether byline is desired

* for new items

* instructions as to whether item is to be
used in entirety or excerpted at editor's
discretion

* source & date if item is not original

ILLUSTRATIONS: black & white prints, ink
drawings, woodcuts, halftones, et al. Be
welcome small doodles as well as larger
efforts. Please give source & date, if not
original.

SCIENTIFIC NAMES: should follow Hitchcock &
Chapman's *Flora of the Pacific Northwest*
where possible. Use of both scientific &
common names is encouraged. Genus & species
names are underlined or italicized.

RETURN OF ORIGINALS: Manuscripts & illustra-
tions WILL NOT be returned unless so re-
quested.

The Bulletin is published as a service to
NPSO members & the public. Your suggestions
& comments are always welcome.

3 3 3

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

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ship runs from September through December.

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& full remittance to: MARY FALCONER, NPSO MEMBERSHIP CHAIR, 1920 Engel Ave. NW, Salem, OR 97304.

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Oregon Department of Agriculture

The Oregon Endangered Plant Species Program: An Update to the Members of NPSO

**Bob Meinke
Program Coordinator**

The State of Oregon's Endangered Plant Species Program was initiated on the first of February. As most members of NPSO probably know, this program was created in direct response to the 1987 passage of Senate Bill 533, now popularly known as the Oregon Endangered Species Act. The Department of Agriculture has been charged by the Oregon Legislature to devise a state list of Threatened and Endangered plant species, and to ultimately develop conservation and recovery plans for any listed taxa. As you might suspect, however, the scope of my job goes far beyond the mere compilation of a list of qualified species, as we are in fact designing an entirely new government program. Fortunately, Oregon has a strong botanical community, both at the professional and amateur levels, and I am confident that this base will be of tremendous value to our development. Recently, I spoke to a committee of senators and representatives in Salem about the progress my office has made to date, and the general direction we are taking with respect to policy and research. I thought it would be appropriate to share the substance of these discussions with you.

First and foremost, the law states that we will complete a preliminary review of appropriate candidate species by the first of July, and I am pleased to report we are on schedule. Candidates are those species eligible for listing under the provisions of Senate Bill 533. At the risk of being repetitive for some I should remind you that, by law, we cannot list a species unless it is threatened or endangered throughout all of its geographic range. You may recognize this constraint as being the same as that imposed by the Federal Endangered Species Act. The plants we are reviewing, then, are all Federal Candidate species (i.e., roughly those found on List 1 of the Oregon Natural Heritage Data Base list of 1987) plus a selected few others, including recently discovered species as well as some with outstanding taxonomic questions. This initial total comes to approximately 170-180 taxa, although we have the authority to consider any qualified additions over time, as we see fit. Our current review procedure has consisted largely of looking over past reports and literature, visiting university herbaria, and consulting with numerous recognized experts. I am also making field inspections when

appropriate, and have a number of survey trips planned for the summer. The actual listing process will begin sometime after the current field season, and will eventually involve the writing and publication of special Oregon Administrative Rules as well as public hearings.

Due to the savings afforded when our program began seven months into the current fiscal biennium, I found myself with some unexpected money that I have elected to use towards field projects this summer. Since spring was fast approaching even as I first started work, I needed to rapidly select a staff for the upcoming months as well as come up with desirable projects. Fortunately, my association with Oregon State University allowed me to secure, on short notice, the services of some excellent botanists. In the future, I hope to cultivate research relationships with other colleges and universities as well. This year's staff all have close ties with NPSO. Nancy Fredricks, an NPSO board member, started her Department of Agriculture assignments on April 4th. She will be conducting reproductive and demographic studies of Calochortus howellii and Calochortus umpquaensis in southwest Oregon. She may also be involved with a proposed taxonomic investigation of Lupinus aridis ssp. ashlandensis. Two additional employees will be brought on in early June. Tom Kaye, president of the Corvallis Chapter, will help with population biology research already in progress on the grazing-impacted Haplopappus radiatus (Baker County), and may also work in the Willows Mountains in July and August on a local alpine species (Lomatium greenmanii) threatened by recreational activities. The third researcher, Ed Alverson, is presently NPSO's Conservation Chair. Ed will be involved in a reproductive and population genetics analysis of the Aldrich Mountains endemic Luina serpentina, and is expected to spend considerable time in Grant County this summer before heading up to Washington State University to work with colleagues there on the laboratory part of the project.

The information gained from these studies will be used in developing conservation programs for these particular plants should they become listed by the state as Threatened or Endangered. We also hope these projects can be used as models for future research on Oregon species of concern. Moreover, these types of studies underscore the commitment the state now has to a strong rare plant research program -- we will continue to be involved with general field inventory, to enhance our knowledge of where target species exist, but we are also very interested in what makes them rare and how best to manage for them. Answering biological and ecological questions is important if we are to succeed. Towards this end, we anticipate working closely with the U.S. Forest Service and the Bureau of Land Management, and have arranged to continue Oregon's relationship with the U.S. Fish and Wildlife Service through provisions of the federal Endangered Species Act. We plan on receiving financial assistance from these agencies in the future, and I

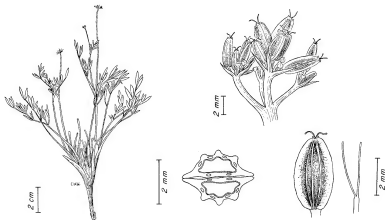
am currently working out details of state-federal projects for 1989. Some federally sponsored cooperative work has already been tentatively approved for 1988, and may include studies of Eriogonum chrysops near Steens Mountain, Lilium occidentale on the southern coast, and Astragalus mulfordiae along the Owyhee River in Malheur County.

Because of the technical orientation of our program, the Department of Agriculture has asked several prominent members of the academic botanical community in Oregon to serve on an advisory committee, to provide me with specific advice on research and the criteria for prioritizing candidates for listing. We have invited faculty members having long-standing interests in endangered species coupled with strong, complimentary technical backgrounds. They are: Dr. Kenton Chambers and Dr. Robert Frenkel (both of Oregon State University); Dr. Susan Kephart (Willamette University); Dr. David Wagner (University of Oregon); and Dr. Rhoda Love (Lane Community College and past president of NPSO). This is not to imply we will not also solicit advice from other well-informed individuals from throughout the state. However, after considerable thought, it was decided that a small, workable group whose members resided within reasonably close proximity would best serve our need for a formal committee. We also intend to annually sponsor a general workshop, with the first possibly taking place this fall, at which information and recommendations can be exchanged between any and all groups or individuals with an interest in endangered plants. The details for this have yet to be worked out, but will presumably follow the style of past conferences with similar goals.

One of the most challenging aspects of my work has been to establish effective working relationships with the many groups and programs having similar interests to ours. Having already alluded to federal agencies, I should additionally point out that the law specifically states that my office will develop contacts with other state endangered species programs in the region. In early May, I convened a workshop at the University of Idaho for the purpose of meeting with other Pacific Northwest endangered plant species program managers. Although a small group, we nonetheless made considerable progress towards strengthening regional ties, and plan to exchange ideas and information in the form of a newsletter and continue meeting in the future. It may be of interest that several of the attendees from other states received some or much of their botanical education or early work experience in Oregon (i.e., Steve Shelly, Angie Evenden, John Gamon, etc.). Within Oregon, contacts have been made with Julie Kierstead of the Berry Botanic Garden and the staff of the Oregon Natural Heritage Program concerning our mutual conservation goals. A potential outcome of this affiliation may be an update of the U.S. Fish and Wildlife Service endangered plant species manual (the so-called "Green Book") that I initially prepared in 1982, and which is now sorely in need of improvement and

updating. The Department of Agriculture is also starting a technical publication series, to consist of articles on Oregon's threatened and endangered plants submitted to scientific journals and periodicals.

As we begin the first year of Oregon's endangered plant species program, a number of you may have questions concerning your possible role, or the role of NPSO, in assisting our efforts. We are strongly committed to a program supported by citizen involvement, and I personally recognize the considerable contribution that has been made, and can continue to be made, by the NPSO constituency. There are a number of potential avenues for state-NPSO interaction in the future, and I hope to discuss some of these with the NPSO board of directors (and any other interested parties) during the upcoming annual meeting at Silver Falls State Park. I will also be attending the endangered species symposium, to be held at OSU June 19-20 in conjunction with the American Association for the Advancement of Science meeting. In the meantime, my work number is 1-378-6458, and my mailing address is Endangered Species Office, Plant Division, Department of Agriculture, 635 Capitol Street NE, Salem 97310-0110. If you have any questions, comments, or suggestions concerning Oregon's Endangered Species Program, please don't hesitate to contact me.



Lomatium greenmanii



To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

Volume 21 No. 7

July 1988

ISSN 0884-5999

CHAPTER NEWS

IMPORTANT NOTICE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine so proper dress and footwear is essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage and terrain. You participate at your own risk. Bring water and lunch.

Blue Mountain

For information contact Bruce Barnes (276-5547).

Corvallis

For information contact Dan Lucma (758-8063).

Emerald

9 July, Sat.

Field trip to Elk Meadows, a BLM Research Natural Area at 4000' on the border of Lane & Douglas Cos. We'll see Sidalcea gunickii & Frasera watsonensis. RHM Botanist Peter Ziska, will lead (687-6691 days, 896-3853 eve. before 9pm). Depart South Eugene High School at 9:30am.

High Desert

9 July, Sat.

Field trip to Cultus Creek/Waxy Lakes. This proposed BNA off Century Drive is scenic and has old growth pine and spruce. Large springs and bogs are of interest. Moderate hike of 2 miles. Leader is Bill Hoskins (389-3330). Depart 8:30am from McDonalds Restaurant in Bend.

16 July, Sat.

DATE CORRECTION. Field trip to Iron Mountain, a classic Canadon wildflower hike of 6 miles on a good trail. Leaders are: Marge Ettinger (382-2255) and Julie Robertson (388-1903). Depart from McDonalds Restaurant at 8:30am.

13 Aug., Sat.

Field trip to Broken Top. An annual trip to see a spectacular display of alpine wildflowers. A 5 mile moderate to strenuous hike with a 1500 ft. elevation gain. Leader Stu Garrett (389-6981). Depart McDonalds at 8:30am.

Mid Columbia

6 July, Wed.

Meeting at 7:30pm at Mosier School. "A Lomatium Extravaganza". Ethnobotanist, Gene Hunn from the University of Washington will present a program with slides on our various native Lomatiums. Samples will be discussed and species determinations made.

No August meeting! Field trips and possible picnic will be planned at July's meeting.

North Coast

- 7 July, Thur. Meeting, 7:00pm at the State Office Building, 3600 Third St., Tillamook. There will be a plant discussion on the Rosaceae.
- 17 July, Sun. Field trip to Hebo Lake. Meet at Hebo Grade School Parking lot at 1:30pm. Contact Clarice Maxwell (842-7023) for more information.
- 4 Aug., Thur. Meeting, 7:00pm at the State Office Building, 3600 Third St., Tillamook.

Portland

- 2-4 July Field trip to Orcas Island. Barb Fox is leading this trip. Contact her for information (659-2445).
- or
- Field trip to Siskiyou Mountains, Dutchmans Peak. Contact George Lewis (292-0415) for more information. Also see directions in last month's Bulletin.
- 9 July, Sat. Field trip to Wahtum Lake, Anthill Trail. two and one-half miles or longer if desired. Leave Gateway MAX Park-and-Ride at 8:00am. Regroup at Hood River Inn (now Mendels) at 9:30am for drive to Wahtum Lake. Leaders: George Jeffcott and Herb Armentrout (658-2751).
- 12 July, Tue. Meeting, 7:00pm. First United Methodist Church, 1838 SW Jefferson St., Portland. Bryan Boyce, horticulturist with Kurisa International, will present a program on "Front Range Flora of Colorado" with comparisons to the Cascades flora.
- 16 July, Sat. Field trip to Monument Peak. Leave K-Mart parking lot in Duallatin at 8:00am. Exit off Salem Freeway - 15, turn right and right again. Leader: Bryan Boyce. Contact Vance Terrall (281-2119) for further information.
- 23 July, Sat. Field trip to Silver Star Mountain. Leave the Park & Ride at the 134th St. Exit off of I-5 six miles north of Vancouver at 8:00 am. Be prepared for 3 miles of rough Forest Service road. Leader is Ed Robinson of the Wash. Native Plant Society.
- 30 July, Sat. Field trip to Mt. Adams and Bird Creek Meadows. Leave Gateway MAX Park-and-Ride at 8:00 a.m. Meet at 9:15 at the Hood River Inn (now Mendel's) parking lot for regrouping. A stop will be made at the store at the north end of the Hood River Bridge to pick up people from Washington. Leader: Keith Chamberlin of the Mid-Columbia Chapter. Contact Vance Terrall (281-2119) for further information.

Siskiyou

Be monthly meetings until September.

- 24 July, Sun. Field trip to Mt. Eddy, California. Rigorous hiking to 9000 ft. elevation. Lots of subalpine rare species. Leader: Wayne Rolfe (482-0093). All participants should call Wayne in advance. Also, anyone interested in making it a two-day camping trip should contact Wayne. For the one-day excursion, meet at Ashland Bi-Mart at 8:00 a.m.

Willamette Valley

Unscheduled mid-week trips will be arranged by telephone tree, depending on weather, season, and interest. To sign up, call Clint Urey (743-2802) or Barbara Halliday (371-1025).

- 9 July, Sat. Field trip to Triangulation Peak, Central Cascades. Moderate, 4.5 mile round-trip. A flower garden! Leave South Salem K-Mart at 7:30 a.m. 1½-2 hour drive to trail head. Leaders: Frances Schaeffer (393-7492).
- 16 July, Sat. Field trip to Bachelor Mountain, Central Cascades. Moderate hike, 4 mile round-trip. Great display of flowers, good views. Leave South Salem K-Mart at 8:00 a.m. Leaders: Helke and Wally Subanks (390-2257).
- 24 July, Sun. Field trip to The Butte Research Natural Area in the Coast Range. An interim zone between the Coast Range and Willamette Valley resulting in an interesting flora. Great views of the Willamette Valley and Cascades. Moderate hike. Leave South Salem K-Mart at 8:00 a.m., or main entrance to Polk Co. Fairgrounds in Rickreall at 8:30 a.m. Leader: Larry Scofield (787-3833).

30 July, Sat.

Field trip to Ramona Falls and Yocum Ridge, Mount Hood. 3-hour round-trip to Ramona Falls; strenuous 13-mile round trip to Yocum Ridge--but more flowers higher up! Leave South Salem N-Mart at 7:00 a.m. Leader: Bill Togn (393-2131).

Wm. Cusick

For information, contact Rachel Sines (963-0674).

IN MEMORIAM -- CAROLYN SIMMONS

In 1961, Carolyn Simmons was among the few wildflower enthusiasts who attended the organizational meeting of the Native Plant Society of Oregon. Shortly afterward it became evident that a functional system must be formed in order that the single business operation of this newly formed group could be conducted. At that time Carolyn became the first elected president of NPSO. Through the years she was most active in this organization, always fostering the theme of wildflower preservation and conservation. Eager to learn more about unfamiliar plant families, such as mosses and lichens, she became an outstanding member of these study groups.

Carolyn had moved from Texas to Oregon in 1961, where her interest in native plants and birds continued. In 1971 she became a part of the Outdoor Program of the Portland Public Schools, and for the next ten years taught Plant Resources to sixth graders.

For the past few years Carolyn was unable to attend meetings and on April 21 of this year left us for that great unknown world. Her loss is deeply felt by all who knew her. She will always be remembered.

-- Ruth M. Hansen

FOREST SERVICE AGREES TO FENCE OUT TRESPASS CATTLE

An article in the May issue of the NPSO Bulletin discussed the impact of trespass cattle on a vernal pond near the Dalles Mountain Road, in the east end of the Columbia Gorge. This 60-acre parcel has come under Forest Service management, specifically that of the Mt. Adams Ranger District of the Gifford Pinchot National Forest.

On May 12, 1988, District Ranger James Bull visited the area, together with District Botanist Marty Stein, Wildlife Biologist Walt Peterson, Range Conservation Officer Debbie Couch, from the Soil Conservation Service, and Russ Jolley, NPSO Portland Chapter Conservation Chair. The special concern was for protection of the population of *Machrocarpus californicus*, listed "Sensitive" by the Washington Natural Heritage Program.

The result of the field trip was a decision by the Forest Service to fence the parcel to exclude the trespass cattle. Also, no new grazing permit would be issued.

Fencing cannot take place until a survey team has established the precise location of the boundaries. This will take place this summer. The goal is to have at least the western boundary fenced before the start of next year's grazing season, thus excluding the trespass cattle in 1989.

The Ranger also indicated that during the fencing operation, "...assistance in packing the rocks necessary to build the fences will be gladly accepted." The rocks are needed for "rock jacks" to hold the fence posts, since digging post holes in solid basalt is close to impossible. NPSO members who are willing to carry rocks for the fencing project will be more than welcome. Notice of the impending fencing party will appear in the Bulletin, probably this fall.

Russ Jolley - Portland Chapter

RE-WRITTEN ROSTER READY!

The brand new, 1988 NPSO Membership Roster is ready! In fact, by the time members read this, they may already have received their copy of the new membership list. Rhoda Love cut and pasted the roster together from a computerized list of members supplied by Shep Wilson, this from memberships processed by Mary Falconer. Julie Kierstead provided the illustrations.

The 20-page booklet has a tan cover and now replaces the green 1985 edition. The new roster contains names, addresses and phone numbers of all NPSOsers who were members in good standing as of April, 1988. Sara Barnum and her committee of hard-working bulk-mail experts very kindly took on the job of distributing a roster to each member. Many thanks to everyone who helped get our re-written roster ready! Rhoda

4th ANNUAL SILKHORN ANBLE PUBLISHING WEEK

Friday July 22 and Saturday July 24 the Oregon Natural Resources Council, Friends of Lake Fork, and the Grande Ronde Resources Council will hold the 4th Annual Silkhorn Anble at Anthony Lakes Lodge and Campground at the base of the magnificent Silkhorn Mountains.

Registration is \$10. For more information call 820-3714 (Prairie City), 963-3339 (La Grande), 523-6117 (Baker), 344-0675 (Eugene).

BULLETIN ENTERS THE COMPUTER AGE

Thanks to a generous (\$1,500.) grant from The Portland Garden Club, our *Bulletin* has entered the arena of desktop publishing. A letter of appreciation has been sent to Mrs. Frederick Horstkotte, Jr., Community Participation Chairman of The Portland Garden Club. Julie Kierstead played a pivotal role by making the existence of the Garden Club's program known to us and Rhoda Love wrote the proposal that got the grant. Our gratitude goes to Julie and Rhoda for their efforts.

Additional thanks go to The Computer Store (of Corvallis) for recognizing the non-profit, educational nature of our organization. In support of our work, The Computer Store sold us our hardware and software package at a savings of about \$1,000. Our new capabilities will allow the *Bulletin* Editor to more easily produce a better quality product that will improve the effectiveness with which we communicate about the native flora of the Pacific Northwest.

We have obtained a Macintosh SE microcomputer and FullWrite Professional, an application that combines word processing, page layout, and graphics capabilities. Currently, submissions may be made in FullWrite, Microsoft Word, MacWrite, MultiMate/Advantage, and ASCII file formats. As the budget allows, we will acquire the capability to accept submissions in Apple II and IBM/compatible formats. Persons who wish to use the computer to prepare materials for the *Bulletin* must make arrangements with the *Bulletin* Editor. Use of the computer will be at the convenience and discretion of the *Bulletin* Editor.

Dan Luoma, President

THE PORTLAND GARDEN CLUB

Member of the Garden Club of America

1132 S.W. VISTA AVENUE
PORTLAND, OREGON 97205

May 15, 1988

Dr. Rhoda M. Love
Grants Chairman
Native Plant Society
393 Fulvue Drive
Eugene, Oregon 97405

Dear Dr. Love,

It is my pleasure to inform you that the Portland Garden Club, through its Community Participation program, has awarded the Native Plant Society of Oregon a grant in the amount of \$1,500 to be used for the purchase of a Macintosh Plus computer with appropriate publishing software.

The Portland Garden Club strongly endorses the work you do, and are pleased to be able to offer our support.

Sincerely,



Mrs. Frederick Horstkotte, Jr.
Community Participation Chairman



Platanus latifolia Hb.
Native range



Mniun insignne HB.
BRITISH COLUMBIA

OREGON OLD GROWTH GETS TEMPORARY REPRIEVE

- by Art Farley, Lane Co. Audubon Society
Reprinted from "The Quail", May 1988.

On Wednesday, 20 April 1988, Judge Helen J. Frye ruled in Federal District Court at Portland to dismiss a suit brought by Lane County Audubon Society and a consortium of other environmental organizations against the Bureau of Land Management (BLM). The suit, filed in last October, was in response to a decision by the Oregon State Director of the BLM in February 1987 not to issue an Environmental Impact Statement (EIS) regarding the effects of BLM timber management plans upon the northern spotted owl population. An Environmental Assessment issued at that time did not disclose or consider significant, new information regarding this decision. The plaintiffs believed this was in direct violation of the National Environmental Protection Act.

The sole basis for the court's decision in Portland was a paragraph slipped into a continuing budget resolution by Senator Hatfield that passed Congress last December. The section attempts to prevent courts from reviewing any, including illegal, conduct of the BLM. In this case, plaintiffs present evidence that new information sufficient to warrant an EIS has become available and that current BLM policy is damaging to the survivability of the northern spotted owl population in Oregon. From the court opinion, "research projects have generated significant new information regarding the spotted owl." And then, "old growth timber on BLM lands in western Oregon will be logged at a rate that will foreclose Secretary Hodel's ability to provide meaningful protection for the northern spotted owl and other old-growth dependent species. New resource management plans scheduled for 1990 will be too late to stop the irreversible effects of current old-growth forest destruction." Unfortunately, the judge then ruled that the section of the continuing resolution introduced by Senator Hatfield ties the court's hands from considering the evidence and doing anything about it.

On 21 April, plaintiffs filed an appeal of the decision for dismissal with the Ninth Circuit Court of Appeals in San Francisco. The following day, they filed for injunctive relief pending appeal with the same Court. The injunction requests that no sales of old growth timber be allowed within a 2.1 mile radius of inventoried spotted owl habitat areas on land under BLM management. This would affect less than 12,000 acres of timber over the next two years. The BLM sells over 1 billion board feet of timber per year from Oregon. The injunction would affect less than one percent of this total, yet this is timber critical for all species primarily dependent on old growth forest for their survival. Plaintiffs are confident on appeal that the language of the continuing resolution will be found not to apply to this case and that the original case will be heard successfully.

- by Wendell Wood, Oregon Natural Resources Council.

On 18 May 1988, the Ninth Circuit Court of Appeals issued an order halting all old growth forest logging on western Oregon Bureau of Land Management (BLM) lands. The old growth groves enjoined by the Court

were described as forest trees 200 years of age or older. Any old growth timber sales currently under contract (an almost two year supply under current rates of cutting), as well as future fire salvage sales, are unaffected by the injunction.

Oral arguments are scheduled to be presented before the Ninth Circuit Court on 19 July 1988. By the issuance of this injunction it is hoped the Court will ultimately overturn the lower court's decision and require multiple use management on western Oregon BLM lands.

Conservationists are now concerned that Senator Mark O. Hatfield and Congressman Les AuCoin may attempt to write more specific language to undo this lawsuit should the appeals court ultimately rule that the BLM acted illegally. It is therefore up to the public to insist that Congress not intervene solely in the interest of the clearcut industry.

WEEVIL ON THE WAY OUT

The Bureau of Land Management's Salem district managers who have long fought a losing battle with encroaching Scotch Broom now have an ally on the horizon.

Formerly, hundreds of Boy Scouts and other volunteers were recruited each year by Jay Grant of BLM's Fishermen's Bend Recreation Site to pull out by the roots some of the acres and acres of Scotch Broom, without much success. "It comes back almost as fast as we pull it out," Grant says.

The new ally, slightly smaller than your standard-size Boy Scout, is the Scotch Broom seed weevil, Anthon fuscicornis.

The weevils, first introduced in Oregon in 1981, do not kill or weaken existing plants, but check their spread by destroying most of the seeds. Developing larvae eat one or two seeds in each pod in which the female laid eggs. Superior flying ability of the adults lets them infest isolated plants without human help.

Weevil populations have increased enough for redistribution to western Oregon forests says Glenn Miller, Oregon Department of Agriculture noxious weed specialist. Efforts are underway to establish nursery sites throughout western Oregon.

Persons interested in obtaining the insects or more information may contact Miller at the Oregon Department of Agriculture, Salem, phone 378-4987.

- Ray Naddy; Reprinted from BLM News, 4/88.

Collecting seeds and growing your own plants can add another dimension to the joy of gardening. Even if you only continue to watch the plants after they finish blooming, and then search for seed you will be amazed at the diversity of seed pods and seed. The drawings on the right by F.H. Hillman, taken from the Nevada State University Agricultural Experiment Station Bull. No. 38, 1897, show examples of some seeds of Nevada plants. The seeds are shown both natural size and enlarged -- no scale is given.

It is frustrating and disappointing to go on a seed collecting hunt only to find that the flowers dried up without making seed or that the seed pods are empty. But it is even more disappointing, and infuriating, to have someone give you seed heads containing only chaff or immature seed. Those of you who are experienced seed collectors know whereof I write, and need read no further. The purpose of this article is to help the others of you avoid the pitfalls. It is easy if the seed shakes out of a pod neatly like columbine or shooting star seed. But usually the dried flowers (including pods or seed coverings) must be crumbled to release the seed, and it will be mixed up with chaff. Blow the chaff away carefully, usually if the seed is large, you will be able to feel it and see it. Hopefully with a hand lens you will be able to recognize smaller seed -- in a dry year, the seed may simply shrivel up and not mature.

Although it may seem early, actually now is the time to begin to think about which seeds you would like to collect, either to grow yourself or to pass on to a seed exchange. The first step is locating the plants from which you would like to collect seed. If the plants are in your garden, it is relatively easy -- all you have to do is watch the plant as it matures and periodically check on the ripening of the seed. Collecting seed from plants in the wild is more difficult and if you do not locate the plants when they are flowering, unless you have had a great deal of experience, the plants are much harder to find and to identify after the blossoms are gone. Find a source where the plants are abundant. Timing is crucial -- seeds collected when immature often have low viability and vigor, and seeds of many native plant species shatter soon after ripening. A good rule of thumb is that it takes about six weeks for the seed of most plants to ripen. But there are many exceptions to the rule: the seed of the first flowers on a lewisia plant usually ripens before the last flowers bloom; the same is true of the seed of composites (remember dandelions); phlox plants have to be watched closely, almost daily as the flowers are drying up, the pods can burst open and the seed flies into oblivion overnight; the lower pods on lupine stems can burst and expel their seed while the upper flowers are still in bloom; etc. Finding ripe seed is not an art, it is a challenge, and often it is a matter of repeated trips to your seed source. Some pods remain upright and hold in the seed even when the stems are dry and the seed is mature -- penstemon, calochortus, paintbrush, and others are like this -- have your paper bag right at hand, and do not tip the pods over until the bag is underneath. Just be sure to scatter some seeds for next year.

James and Cheryl Young in their book discuss the sequence of seed development:

a. Soft dough stage: if the seed is pinched between the thumb and forefinger, the inside of the seed will be squeezed out (if the seed is large); very small seed will simply be squashed.

b. Hard dough stage: bite the seed, once the soft dough stage is completed, fully mature seed is generally very hard to the bite. Usually ripe seed is no longer green in color, but is tan or brown or black. Seed collection should begin with the transition from soft to hard dough stage. The chance of obtaining plump, fully matured seeds can be increased by cutting stems with seed pods, rather than stripping the pods from the plant. In some species, this method will allow seed maturation to continue. Care must be taken to spread out the plant material so that it dries



Gumweed
Grindelia squarrosa



Fiddleneck
Amsinckia tessellata



Yellow Evening-primrose
Oenothera elata



Dandelion
Taraxacum officinale



Ox-eye Daisy
Chrysanthemum leucanthemum



Buttercups
Ranunculus sp.



Curled Dock
Rumex crispus



Cinquefoil
Potentilla sp.

uniformly and the seed does not mold. If the seed is immature, it may continue to ripen if the flower stems are put in water. (Some say that adding a little sugar to the water helps.)

c. Maturity: obviously the ideal stage to collect seeds. Unfortunately, maturity and seed pods breaking open may occur at the same time. The seed of many plants is violently ejected when the pods break open and the seed is dispersed widely. For instance, it is almost impossible to find phlox seeds after the pods have broken open. To make sure of getting some viable seeds, repeated collections may be necessary. These collections should extend from the latter part of the soft dough stage until all seed is mature. The period of optimum seed collection can be extended by starting the seed collection at low elevations and following the plants upslope as they mature. If the seed pods on a south-facing slope have already shattered, it may be possible to find the same kind of plants on a north or east-facing slope with collectible seed.

Areas burned by wildfires are excellent for seed collection for several seasons after the burning. This is due to natural plant succession, the response of many species to a reduction in competition, and nutrient changes brought on by the fire.

Keeping records of your collections is extremely important. If you are collecting several species in different bags at the same time, take care not to mix up the seeds. Collect seed only from healthy plants with desirable attributes, i.e., vigorous growth under adverse conditions such as drought or salinity, dense vegetative growth, or high seed production.

Plastic bags or wax-coated paper containers should never be used to store seed. The moisture content of freshly collected material is often quite high, and nonporous bags can trap this moisture causing the seed to mold or rot. Sometimes it is expedient to collect seed in plastic bags, but transfer it to large paper bags as soon as possible. It is best to clean the seed as soon as it is dry, sometimes insects are inadvertently collected with the seed (or eggs hatch as in legumes) and the seed will be damaged. A simple method to clean seed is to rub the collected materials over a coarse screen. A more efficient method is to rub the materials between two wooden paddles covered with rough rubber matting. Either method loosens the seed from the chaff. Care must be taken not to crush the seed. The chaff can be removed by winnowing or by sifting through a series of screens (strainers) with different sizes of mesh. Thoroughly dried seed can be stored in closed paper bags or dry glass jars in a cool place, add some moth balls if insects are suspected.

This brief article cannot answer all your questions, for more information consult the book: Collecting, Processing, and Germinating Seeds of Wildland Plants. 236 p. by James and Cheryl Young. Copies can be obtained from them: [phone 702-747-3037] 600 Akard Circle, Reno, NV 89503.

Reprinted from the "Newsletter" of the Northern Nevada Native Plant Society, June 1983.

EXCERPTS FROM WPSO GUIDELINES AND ETHICAL CODE:

Encourage members to grow native plants only from seeds or cuttings.

Collecting for whatever purpose should be done as inconspicuously as possible. Casual observers may not understand the reasons for collecting and may feel license to do likewise.

Collecting must never endanger a plant population. Collect seeds or cuttings in preference to whole plants. Avoid excessive collecting.

Seeds should not be sold. Growers must exercise discretion in collecting seeds and cuttings to avoid endangering a plant population.

A CHECKLIST AND KEY TO PRUNUS IN WESTERN OREGON

Wild plums and cherries are a showy part of our spring flora in western Oregon. So it is surprising that our floras don't include several naturalized species. This is apparently the first report of escaped *P. persica* and *P. cerasifera* from western Oregon. In spring of 1988 I documented wild plants of each from the Eugene area in Lane County. These flowering specimens will be deposited in the herbarium of the University of Oregon.

Dr. David Wagner, the herbarium curator, and Alan Curtis, former BLM botanist, have located wild populations of *P. spinosa* in Lane County, although Hitchcock and Cronquist (1981) did not record it west of the Cascades, and Peck (1961) did not list it in Oregon.

Below is a checklist of the *Prunus* in our area. Notes on fruit color and common names are based on the literature. Species escaped from cultivation are marked with an asterisk (*).

CHECKLIST OF PRUNUS IN WESTERN OREGON

TAXA	[FRUIT COLOR]
<i>Prunus avium</i> L. * (sweet cherry)	[yellow, red]
<i>P. cerasus</i> L. * (sour cherry)	[red]
<i>P. cerasifera</i> Ehrh. * (cherry plum)	
var. <i>cerasifera</i>	[red, yellow]
var. <i>pissardii</i> Koehne	[red-purple]
<i>P. demissa</i> (Nutt.) Walp. see	
<i>P. virginiana</i>	
<i>P. domestica</i> L. *	[yellow, green,
(cultivated plum, common plum)	blue-black,
	blue-purple]
<i>P. emarginata</i> (Dougl.) Walp.	
var. <i>mollis</i> (Dougl.) Brew.	
(bittercherry)	[red]
<i>P. laurocerasus</i> L. *	
(common cherry-laurel)	[black-purple]
<i>P. persica</i> (L.) Batsch * (peach)	[red, yellow]
<i>P. spinosa</i> L. * (blackthorn, sloe)	[blue, black]
<i>P. subcordata</i> Benth. (wild plum,	
Klamath plum)	
var. <i>subcordata</i>	[red-purple]
var. <i>oregana</i> (Greene) Wight	[dark red]
var. <i>kelloggii</i> Lam. *	[yellow]
<i>P. virginiana</i> L. (common	
chokecherry)	
var. <i>demissa</i> (Nutt.) Torr.	[red, purple,
	black]
var. <i>melanocarpa</i> (Nels.) Sarg.	[blue-purple,
	black]

The sequence of flowering among the introductions this year seems to be: *P. cerasifera*, *P. persica*, *P. avium*, *P. domestica*, *P. laurocerasus*, and *P. spinosa*. I have not seen *P. cerasus*.

In the key to species, *P. mahaleb* L. * (perfumed cherry) keys to *P. emarginata*. It can be distinguished, if found, by: acute leaves are nearly as broad as long, fruit black or yellow, petals 4-7.5 mm, (glabrous? calyx); while *P. emarginata* has blunt leaves longer than broad, red to black fruit, flowers 12-19 mm across, and a pubescent calyx.

Flowering *Prunus* can usually be identified with confidence if old pits can be located beneath the plant.

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Peter F. Zika
Emerald Chapter



P. spinosa

(Illustrations on this page are from Hitchcock et al., Flora of the Pacific Northwest, used with permission from the publisher.)



var. demissa



P. virginiana



var. melanocarpa



var. virginiana


var. emarginata
Prunus emarginata

1. Leaves evergreen, thick and leathery, often > 15 cm long; escapes rarely flowering in Oregon, inflorescence a raceme..... *P. laurocerasus*
1. Leaves deciduous, lengths various, rarely > 15 cm; inflorescence a raceme, corymb, umbel, or flowers solitary
2. Inflorescence an elongate raceme of many (at least 12, usually 20) flowers, terminating a new leafy branchlet of the current year
3. Young twigs pubescent; leaves uniformly pubescent beneath; fruit dark red, purple or black *P. virginiana demissa*
3. Twigs glabrous; leaves glabrous, or hairy below only on axils or veins; fruit blue-black or black *P. virginiana melanocarpa*
2. Inflorescence a corymb or umbel of fewer than 12 flowers (or flowers solitary), sessile or on short lateral shoots (leafy or not)
4. Ovary and fruit densely pubescent; flowers and fruit sessile or nearly so, pedicels < 6 mm; flowers pink to white, solitary or paired *P. persica*
4. Ovary and fruit glabrous; flowers and fruit of most species on longer, distinct slender pedicels, often not solitary; flowers in most species white
5. Inflorescence a corymb; petals 4-5 mm long *P. emarginata mollis*
5. Flowers single or umbellate; petals mostly > 5 mm
6. Calyx tube pubescent; spiny thicket-forming native shrub, pit flattened; leaves obtuse to rounded
7. Fruit pubescent *P. subcordata oregana*
7. Fruit glabrous
8. Fruit yellow *P. subcordata kelloggii*
8. Fruit red-purple *P. subcordata subcordata*
6. Calyx tube glabrous; introduced spineless trees or shrubs, if spiny pit globose (*P. spinosa*); pit round or flattened; leaves various
9. Pits rounded in cross section, calyx lobes glabrous
10. Pits roughened; petals ca. 6 mm long; young leaves convolute; spiny rhizomatous shrub; puberulent twigs; fruits erect, single or paired *P. spinosa*
10. Pits smooth; petals > 10 mm long; young leaves conduplicate; spineless trees; twigs glabrous; fruits dangling, usually more than two per node
11. Calyx tube constricted near top, calyx lobes entire; bud-scales at base of umbel not leaf-like, the inner ones divergent or reflexed; leaves retaining some pubescence, especially underneath along the midrib, the blades ca. 7-15 cm long at maturity and the petioles with conspicuous glands near the blade; petals obovate; fruit sweet; upright single-trunked tree when escaped *P. avium*
11. Calyx tube not constricted, lobes glandular-toothed; bud-scales often with leaf-like tips, the inner ones erect; leaves becoming glabrous beneath, the blades mostly 4-8 cm long at maturity with glands towards the base (rather than on the petiole); petals suborbicular; fruit sour; suckering "bushy-topped" tree *P. cerasus*
9. Pits flattened in cross section, two-edged, calyx lobes hairy near base on inner face
12. Margins of calyx lobes glandular ciliate; young twigs shiny reddish-brown; leaves small, the blades mostly less than 5 cm long, well developed when flowering; pits < 18 mm long; fruits < 2 cm diameter; pedicels long (> 1 cm) and slender; caespitose shrubs or small trees
13. Foliage purple; flowers pink *P. cerasifera pissardii*
13. Foliage green; flowers white *P. cerasifera*
12. Margins of calyx lobes pubescent and glandular-toothed; twigs and leaves various, leaves 5-10 cm, mostly not expanded at anthesis; pits > 20 mm; fruits > 15 mm broad; pedicels relatively stout and often < 1 cm; rhizomatous shrubs or trees *P. domestica*

**MOENCHIA ERECTA, THE MYSTERY
CARYOPHYLL, REVISITED**

by Rhoda Love

If I had any sense at all, I would not tell this story on myself, for it only shows how faulty my memory has become. However, it also shows how stubborn a botanist can be in pursuit of the name of an unknown plant, and it shows how our botanical knowledge advances step by stumbling step when we take the time to communicate with one another.

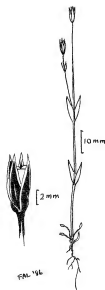
Two years ago, in these pages, Frank A. Lang of Southern Oregon College published a delightful article entitled "New or Unusual Southwest Oregon Weeds, Part II, *Moenchia erecta*, the Mystery Caryophyll." (NPSO Bulletin, June, 1986, page 66.) I read the article carefully and with much interest at the time, as I have always been interested in weeds. The article told the story of Frank's discovery of a little, 4-merous, weedy, *Arenaria*-like caryophyll at Round Top in Jackson County, which could not be keyed in Hitchcock, Munz or the first edition of Peck. Frank finally identified his weed as the European import, *Moenchia erecta*, in Tutin's, *Flora Europaea*. Subsequently he mentioned the plant to Ken Chambers of OSU who knew the species and reported that it could be keyed in the second edition of Peck. So much for events in 1986.

This spring I have been teaching systematic Botany at Lane Community College here in Eugene. Coming down the steps from the parking lot through a weedy and grassy area of the LCC campus one morning in April I bent down and picked a delinquent little caryophyll to illustrate its opposite leaves and swollen nodes to my class. Looking more closely, I saw that the tiny plant, which looked like an *Arenaria*, was 4-merous. Just then a colleague of mine, a fine botanist, who shall remain nameless to protect his reputation, wandered by and I said "What's this little 4-merous caryophyll outside the door?" "Oh, that's *Arenaria pusilla*," he replied. "But it's 4-merous," I objected as he hurried off. I thought I heard some muttering about "phenotypic plasticity."

Of course I tried to key the plant in all my available Floras — including an ancient and crumbling first edition of Peck — to no avail. Throughout, something kept nagging at me. In my mind I associated the answer to the puzzle with a living Oregon Botanist, but who? I kept turning the problem over and over in my mind. Then, at the end of May, I had occasion to attend a meeting of botanists at OSU. At the end of the meeting when we were throwing out miscellaneous questions, I turned to Ken Chambers and asked, "Do we have a 4-merous *Arenaria*?" "*Moenchia*," he replied, and memory came flooding back! The article by Frank Lang! I couldn't wait to get home!

I have now reread Frank's article — it's as delightful as I remember it — and it ends with a plea for Bulletin readers to keep their eyes open for *Moenchia* and to report if, when, and where it is found. So, I am reporting that the plant is alive and well in Lane County on a grassy hillside (not a wet seep, as in Jackson County). I wonder where the little *Moenchia*-kin will show up next? Be sure to report here if you spot it.

MOENCHIA ERECTA



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LENGTH: 10th of each month
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when double spacing looks odd, indent
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Type your own headline, centered, all caps.
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CREDITS: For each submission, provide

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 - * author—specify whether byline is desired
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- ILLUSTRATIONS:** Black & white prints, ink
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welcome small drawings as well as larger
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original.

SCIENTIFIC NAMES should follow Hitchcock &
Cronquist's *Flora of the Pacific Northwest*
where possible. Use of both scientific &
common names is encouraged. Genus & species
names are underlined or italicized.

NOTES ON ORIGINALS: Manuscripts & illustra-
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To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

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CHAPTER NEWS

IMPORTANT NOTICE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine so proper dress and footwear is essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage and terrain. You participate at your own risk. Bring water and lunch.

Blue Mountain

For information, contact Bruce Barnes (276-5547).

Corvallis

For information contact Dan Luoma (758-8063).

Emerald

15 Aug., Mon.

Set up booth for Lane County Fair.

16-21 Aug.

Lane County Fair. Volunteers are needed to set up and man the booth at the Fair. Entrance tickets are provided free to volunteers and the Chapter receives money for participating. Please contact Nadine Smith (344-6478) to help in any capacity.

No meeting until September.

High Desert

13 Aug., Sat.

Field Trip to Broken Top. An annual trip to see a spectacular display of alpine wildflowers. Five mile, moderate to strenuous hike with a 1500 ft. elevation gain. Leader is Stu Garrett (389-6981). Leave the parking lot at McDonalds, 2048 NE Third, in Bend at 8:30 am sharp.

Mid Columbia

3 Aug., Wed.

Summer Potluck at Susan Kofahl's house, 3 miles south of Mosier, 2050 Mosier Creek Road at 6:00 pm. Call 478-3576 for directions. Swimming and BBQ available. You may bring plant specimens for show and tell and identification.

North Coast

4 Aug., Thur.

Meeting, 6:30 pm potluck at Killechie River Park.

14 Aug., Sun.

Field trip to Bay Ocean Spit. Meet at the parking lot at 8:30am 200 years ago Capt. Robert Gray discovered and entered Tillamook Bay.

Portland

6 Aug., Sat.

Field trip to Cloud Cap. Leave the K-Mart at Milwaukie Expressway at 82nd Ave. at 8:00 or meet at Zigzag Ranger Station at 9:15 am. Leader is George Lewis (293-0415).

No meeting in August.

- 13 Aug., Sat. Field trip to Burnt Lake. Leave the K-Mart at 62nd and Milwaukie Expressway at 8:00am or meet at the Zigzag Ranger Station at 9:15am. Leader is Florence Ebeling (244-4122).
- 20 Aug. No field trip.
- 27 Aug., Sat. Field trip to High Prairie, Camjusen Loop and Lookout Mtn. area east of Mt. Hood. A loop of about 6 miles at an elevation of approx. 6000 feet. Meet at the Gateway Park and ride by 8:30am. Leader is Louise Godfrey (223-4735).
- 10 Sept., Sat. Field trip to Indian Heaven led by Elisabeth Handler. Details later.

Siskiyou

- 8 Sept., Thur. Meeting at 7:30 pm in Rm. 171, Science Building, 608C. Mary Paytsel will give a program on "Butterflies of the Siskiyou".

Willamette Valley

- 10 Aug., Wed. Field trip to the Cloud Cap Inn area, Mt. Hood. Easy to moderate hike. At this elevation late spring and early summer flowers should be blooming. Carpool, 7:00am at South Salem K-Mart. Leader is Bill Sgan (393-2131).
- 13 Aug., Sat. Field trip to Breitenbush Lake, Central Cascades. Easy to moderate hike. Last few miles of road rough but passable by passenger cars with high clearance. Leader is Wilbur Bluhm (393-2934).
- 15 Aug., Mon. A special Chapter meeting. We've been asked to help develop a native plant landscape plan for the Oregon Dept. of Fish & Wildlife exhibit at the Oregon State Fair. Come and share your ideas! Call Pat Rogers-Rochma (769-4669) for time and place.

SPECIAL NOTE: - Unscheduled Mid-Week Trips will be arranged by telephone tree, depending on weather, season, and interest. To sign up call Clint Urey (743-2802) or Glenn & Barbara Halliday (371-1025).

Wm. Cusick

For information contact Rachel Sines (963-0674).

NATURAL VEGETATION OF OREGON AND WASHINGTON

The Oregon State University Press is proud to announce the publication of a reprint edition of the classic volume on regional ecology, *Natural Vegetation of Oregon and Washington* by Jerry F. Franklin and C.T. Dyrness, with the addition of a bibliographic supplement. This supplement identifies the major advances in research and our understanding of the vegetation of the Pacific Northwest since *Natural Vegetation of Oregon and Washington* was first published in 1973 by the USDA Forest Service, and contains more than 500 citations, bringing the bibliography up to date through 1987.

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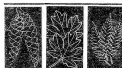
mon names of plants, and provide a general subject index.

Natural Vegetation of Oregon and Washington by Jerry F. Franklin and C.T. Dyrness. ISBN 0-87071-356-5. +64 pages, 8 x 10 1/2 inches, paperback. \$22.95.

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Send orders to:
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101 Waldo Hall
Corvallis, OR 97331



Who has the files on developing a list of nurseries that NFSC can recommend for native plants that are not collected from the wild? Please contact Dan Luoma at 2912 NW Arthur Ave., Corvallis 97330 (758-8063).

NFSC received this letter in response to the article in the June 1988 Bulletin about "Protecting Roadside Wildflowers From the Highway Department -- A Hopeless Cause?".



Department of Transportation
HIGHWAY DIVISION
3311 N.E. Frontage Road
The Dalles, OR. 97058

June 20, 1988

Native Plant Society of Oregon
2584 N.W. Xavier Street
Portland, OR. 97210

Became aware of comment in your bulletin about Highway Division crew spraying entire R/W width on Mosier-The Dalles Highway and expression of concern maintenance operations will have on wildflowers.

Acknowledge your concerns. Maintenance operations will be accomplished with need to protect wildflowers in mind. On this roadway, maintenance efforts need to be accomplished in a way that will leave the area along the roadway in as natural condition as possible.

Chet Anderson
Chet Anderson
District Maintenance Supervisor

SANGUINARIA -- BLOODROOT A NEW USE FOR A BEAUTIFUL PLANT

Sanguinarine, an extract from bloodroot (a common spring-flowering plant throughout the Midwest), could be the most important discovery for dental care since fluoride, according to the October 1987 issue of American Health. This substance interferes with bacteria's ability to convert carbohydrates into plaque, a gum-eating acid. It also blocks the enzymes that destroy gum tissue. According to Webster's Dictionary, "the rhizome and roots of the plant are used as an expectorant and emetic."

A toothpaste, "Visident," has recently appeared in our markets which is advertised "to provide special benefits not found in any conventional toothpaste..." One of these benefits is a "plaque fighting formula to help reduce the build up of dental plaque." The ingredients listed are: "Dicalcium Phosphate, Water, Glycerin, Sorbitol, Titanium Dioxide, Hydrated Silica, Zinc Chloride, Sodium Lauryl Sulfate, Carrageenan, Flavor, Sodium Saccharin, Citric Acid, Sanguinaria Extract." While there are many other toothpastes which claim to fight plaque, we found no others which listed Sanguinaria as an ingredient. A mouthwash of the same name is also available in stores. Unlike chemical-based anti-plaque treatments, the sanguinaria rinse (or toothpaste) does not stain teeth.

Sanguinaria canadensis is a member of the Poppy Family and blooms from March through April in rich soil in moist woods. Its beautiful white flowers are a lovely contrast to its blue-green, lobed leaves. It gets its common name from the red juice that oozes from its broken stems. The rhizomes contain an even greater amount, as the common name implies.

Eastern Indians used bloodroot juice as war paint and dye for clothing and basket fibers. They harvested the rhizomes in the autumn. When needed, they were brewed into a tea to treat rheumatism. The juice was also employed in various forms as a remedy for jaundice, sore throat, catarrh, and ringworm. A small dose was supposed to act as a tonic, stimulating the digestive tract. In larger doses the juice could be a narcotic.

—Reprinted from the Newsletter of the
Northern Nevada Native Plant Society, 6/83

IN MEMORIAM

for Marion King
from Philip King
Edward & Jean Mc Dowell

SCARLET GILIA —
The Wildest Wildflower in the West
 [Adapted from *Natural History*, June 1988 article by
 Ken Paige.]

This adaptation is from the Summer 1988 edition of *Douglasia*, the newsletter of the Washington Native Plant Society. The original fascinating article is in *Natural History*, June 1988, by Ken Paige. "Doug" is their editor, Art Kruckeberg.

Many WNPS members know scarlet gilia (*Ipomopsis aggregata*). It clamours for recognition with its showy red trumpets copiously displayed in our drier eastside mountains and lowlands. What surprise Doug was to see it featured in a current *Natural History* magazine as "The Wildest Wildflower in the West." Willy because scarlet gilia copes with herbivory (mostly browsing by deer and elk) in a most ingenious way.

But first a caveat or two. The populations under scrutiny are located in northern Arizona. We cannot say for certain that scarlet gilia response to herbivory holds true in the Pacific Northwest. This should invite WNPS members to look into scarlet gilia's ecology in Washington state.

Author Ken Paige has found scarlet gilia to have several adaptive "life-insurance" policies, to ensure reproduction and survival. How can being browsed by deer and elk possibly be coped with by the long-suffering plant? The answer is simple: browsed plants don't give up and die; they regenerate to produce even more flowering stalks. So seed set is given another chance; the next crop is just as fertile and bountiful as the first would have been.

But then there's more to scarlet gilia's survival than this adaptive response to browsing. It has to do with its "willingness" in changing flower color. Scarlet gilia comes in two colors—red versus pale pink to white individuals (or even a mix of these colors on the same plant). Hummingbirds service the red flowers by day and nocturnal hawkmoths visit the pale flowers. Moreover, the shift from one pollinator to another can be seasonal. When the hummingbirds migrate, hawkmoth pollination takes up the slack, with, of course, the right colored flowers. However, this particular flexibility is very local (Fern Mountain the San Francisco Peaks area of Arizona); hummers stay on to complete their pollination rounds in other habitats—where red flowers prevail.

A third trick to ensure reproductive success is played by those plants that bloom late. Late flowering individuals do not die; rather, they proliferate new rosettes, especially if not pollinated late in the season. Since scarlet gilia is usually monocarpic (dying after flowering), this rosette-producing trick keeps an individual alive for yet another year.

For at least one locality in its wide western range, scarlet gilia shows a remarkable versatility in strategies to stay alive and reproduce. It should be enticing to look at its response to browsing and its floral biology here in Washington. Anyone for taking on our local populations as a fruitful exercise in local natural history?

A final note. In case you know this plant as *Gilia aggregata* (not as *Ipomopsis aggregata*) Doug must tell a little story about a fellow botanist, Verne Grant, who has made the study of gilias a life-long passion. Dr. Grant decided that the perennial gilias should be placed in their own genus. When he published the monograph of the group he entitled the paper, "A Synopsis of *Ipomopsis*" — with no doubt a chuckle!



Gilia aggregata

[Illustration from Hitchcock et al., *Flora of the Pacific Northwest*; used with permission from the publisher]

**LOMATIUM BRADSHAWII: WHAT HAS
DELAYED FEDERAL LISTING?**

Bradshaw's desert parsley, *Lomatium bradshawii*, was supposed to be Oregon's third federally listed rare and endangered plant species. Persons who have been tracking the federal listing process fully expected *L. bradshawii* to be published as listed in the Federal Register last December or January. But it has not been listed. Why?

As Bulletin readers know, the Federal Rare and Endangered Species Act was passed into law in 1973. In 1979 Siddall, Chambers, and Wayne published "Rare, Threatened and Endangered Vascular Plants in Oregon - An Interim Report," in which they named over 100 Oregon plants that were considered rare and possibly threatened at that time. Remarkably, in the FIFTEEN YEARS since the passage of the Federal Bill and the nearly 10 years since publication of the "Interim Report," ONLY 2 OREGON PLANT SPECIES HAVE RECEIVED FEDERAL LISTING. It is well known that the Federal listing process is slow and cumbersome, but this is ridiculous!

But let us return to *Lomatium bradshawii*. The little yellow-flowered *Lomatium*, a plant of remnant Willamette Valley wet prairies, was proposed for listing in the Federal Register in late 1986. Its status was fully described in the USFWS's Endangered Species Technical Bulletin, Vol. XI No. 12, December 1986. Comments were called for with a deadline of January 20, 1987. Unless a change in status is determined, plants can be expected to receive listing one year after their publication in the Federal Register, and so, as stated above, Federal Listing of *L. bradshawii* was expected last December, but nothing happened.

Becoming concerned about the status of the plant that I had confidently told many people would be Oregon's third federally listed species, I wrote, on April 30 of this year, to Rolf L. Wallenstrom, Regional Director of the U. S. Fish and Wildlife Service in Portland asking about the status of Bradshaw's *Lomatium*. (I will be glad to send a copy of my letter to any Bulletin reader who requests it.) My inquiry to Mr. Wallenstrom has to date (July 3) received no acknowledgment or reply, a situation which I find deplorable. My federal taxes pay Mr. Wallenstrom's salary, and I believe it is his obligation to reply to citizens' requests for information.

Several weeks ago, I wrote to my U. S. Senators, Bob Packwood and Mark Hatfield complaining of my lack of response from Mr. Wallenstrom. Both senators replied at once and promised an investigation of the situation. Hopefully, I will receive some satisfactory reply about the status of *Lomatium bradshawii* which I can report in a future Bulletin. Meanwhile, I would like to request that other NPS members and state and chapter officers write to Mr. Wallenstrom inquiring about the status of *L. bradshawii* and mentioning your concern about the slow pace at which Oregon's rare and endangered plant species are receiving federal attention.

Here is the full address to which you should address your inquiries:

Mr. Rolf L. Wallenstrom, Regional Director
U. S. Fish & Wildlife Service
Lloyd 500 Bldg., Suite 1692
N. E. Multnomah St.,
Portland, Oregon 97232

Many thanks for your help.

Rhoda Lowe
345-6241

LOMATIUM POST SCRIPT

In June, both Senators Packwood and Hatfield promised an investigation of the situation described here. The day I sent the above to our Bulletin editor, I received a second piece of correspondence from Senator Packwood with a copy of a letter enclosed (to the Senator) from USFWS Acting Regional Director Wally Stencok promising some action on *Lomatium bradshawii*. And today (7-7-88), I received a letter from Mr. Wallenstrom apologizing for the delay and indicating that the Service is presently working on the listing of *L. bradshawii* and plans to have the proposal and plan "finalized before the end of the calendar year."

Needless to say I am pleased to have finally received an answer to my April inquiry, but I still think it is a pity that the answer from a federal agency did not come until a Senatorial "nudge" was applied, and I also think it might be a good idea for other NPSers to write to Mr. Wallenstrom supporting the listing of Bradshaw's desert parsley and asking him why the listing process for Oregon endangered species seems to take so long. R. L.



Lomatium bradshawii.

Art 83

(Illustration from Threatened and Endangered
Vascular Plants of Oregon: An Illustrated Guide.)

Wildflowers of the North/South Coasts

by Marjorie Willis, Natural Resource
Planner Oregon State Parks

Botanizing and wildlife watching are just starting to be recognized as significant recreational activities enjoyed by many segments of the general population. Site-specific guides are being written for people who enjoy these activities. Oregon Wildlife Viewing Guide, an 80-page booklet describing 123 sites was recently produced by Defenders of Wildlife in cooperation with a number of state and federal agencies and private corporations. The authors are Julie Goodnight, Sara Wickerman and David Marshall. The guide contains color photos, 13 maps and descriptions of each site, including species, season, specific directions, and facilities. In late August it will be available at Oregon State Park Headquarters, regional offices and interpretive centers; Oregon Dept. of Fish & Wildlife Offices, National Forest and National Park Visitor Centers and specialty bookstores for approximately \$4.00. For an addition mailing and handling charge, it can be ordered through the mail from Defenders of Wildlife, 333 South State Street, Suite 173, Lake Oswego, OR 97034.

Perhaps someday someone will develop such a guide to botanizing in Oregon with an emphasis on blooming times in selected localities which have wildflower displays that will be appreciated by the general public as well as WPGO members. This would be a good teaching tool to help Oregon voters develop a desire to conserve significant botanical resources. The two new books Wildflowers of the Columbia Gorge by Russ Jolley and Wildflowers of the Western Cascades by Ross and Chambers are examples of what can be done for more specific areas.

Meanwhile, Oregon State Parks is trying to fatten up its files on recreational wildflower viewing opportunities within the state park system. This information may be used to write articles and interpretive fliers for the general public on when and where to go to see scenic floral displays in state parks.

If you have information to share about state parks and waysides with scenic fields of wildflowers, please send the information listed below to "Wildflowers & Recreation", Oregon State Parks & Recreation, 525 Trade Street SE, Salem, OR 97310:

1. Name of park or wayside.
2. County.
3. Location.
4. The most showy or noticeable species (select half a dozen).
5. Dates of the best part of the blooming season.
6. Any species that might be especially interesting to the general public.

With the help of park rangers and a few WPGO members, I wrote a two-part series on wildflowers in the state parks of the north and south coast for Oregon Coast magazine. I wasn't able to confine all of the information I used in the articles, so I am asking for the help of the WPGO membership for corrections and additions to the following articles. What better source of such information could I find than our membership. Please send your comments to the address above.

The plentiful winter rains of coastal Clatsop, Tillamook, and Lincoln counties yield tall stately forests, resplendent with mosses and a myriad of colorful, photogenic wildflowers.

Only a small sample of the wildflowers that can be seen in the state parks on the north coast will be discussed in this article. You'll find many more when you explore coastal parks. So that others can enjoy the same experience in state parks, remember to take only pictures and leave only footprints.

Thirteen miles south of Seaside, off Highway 26, is Saddle Mountain State Park. Its wildflowers are internationally famous among botanists because it is a

refuge for species from Alaska and Canada that were pushed to the south during the last ice age. These species died out at the lower elevations, but remained near the 3,283-foot summit of Saddle Mountain because of the cool, moist climate. (The annual rainfall is 120 inches.) Some of the wildflowers are so rare that they only occur in one or two other locations. A total of 301 species of plants are known from Saddle Mountain; eleven of these are rare.

The spectacular fields of wildflowers are on the upper part of the rugged 3.5-mile hike to the top. There is a 1,700-foot elevation gain, and the drop-offs beside the trail are breathtaking. It is

important to stay on the trail to protect the fragile and precious plant communities. The ever-changing wildflower display is best April through July. In August and September the show continues with monkey-flowers (March-August), daisies, fleabanes, and many others.

The brilliant yellow flowers of the woody-leaved Oregon sunshine (May-August) and the bright blue Oregon iris (April-June) seem to pose for photographers.

In June and July in the saddle near the top, the bronzy-pink flowers of copper-bush, a woody relative of the rhododendron, can be seen.

In the rocky habitat nearby,

Columbia bitterroot is festooned in electric purple. The odd little, pinkish-white "medusa-head" of the nodding onion; the introduced medicinal plant, foxglove; Columbia tiger-lily; and blue-eyed grass, a dainty member of the Iris family, can be spotted during the same season.

Vibrant blue larkspurs (April-July) contrast nicely with the white blossoms of cow-parsnip (June-August). The large, pink flowers of the rare and beautiful hairy-stemmed checker-mallow can be seen June through August.

Oswald West State Park, stretching from Arch Cape to Neahkahnie Mountain, features a rain forest with massive old-growth conifers. Explore the north half of the park to find the yellow to dark-purple *Bushmikiia*, or ground-cone, a parasite that lives on the roots of salal (June-July); Columbia tiger-lily; and rattlesnake plantain, an orchid with small flowers and beautifully variegated leaves in a basal rosette (July-August).

From May through July, visitors at Neahkahnie Mountain can see the rare Cascade Head catchfly, the hairy-ghostly, waxy-white Indian pipe flowers in the deep shade. Its nourishment comes from a nearby green plant, via a mycorrhizal fungus attached to the root.

Some attractive plants at Nehalem Bay State Park include the tree lupine, whose bright yellow racemes reach six feet (April-August); the yellow-flowered western tansy (June-September); and the diminutive coastal strawberry (April-May), which produces exquisite fruits in June and July.

Scotch broom is quite plentiful (April-May) in the park. Although the shrub is blanketed by pretty yellow blooms, this European introduction is considered by many to be a weed.

Cape Meares State Park, known for its old growth forest, is a good place to go flower hunting late in the season. Flowers to see there are fireweed, of the Evening Primrose Family (June-September); Indian paintbrush (April-September); yarrow, a white, many-flowered composite (April-October); salmonberry, with its striking purple flowers (April-August); and monkey-flower (March-September). Blue-eyed grass is a noteworthy early-bloomer (April-July) at Cape Meares.

On the beach at Oceanside State Wayside, look for a fleshy member of the Mustard Family called sea-rocket (July-August); the miniature-sized beach morning glory (April-September); and Pacific silverweed, whose leaves have a silver lining and whose flowers look like buttercups.

In the early spring at Cape Lookout State Park and among other coastal parks, one can see the primitive, yet

elegant skunk cabbage (February-May), and the western trillium (March-May) in bloom.

In May or June visitors will see the flowers of the black twin-berry, a swamp-loving member of the Honeysuckle Family (May-July); salal (May-June), whose berries are later eaten by bears, birds, and humans; and false lily-of-the-valley with its artistically sculptured leaves (April-June).

Near the boat ramp in the eastern section of Devil's Lake State Park, Indian pond lily blooms from May through August.

Beverly Beach State Park has many species of wildflowers. On a trip in April or May, one will see red-flowering currant, a luscious cloud of pink (March-July); skunk cabbage on moist ground, wild cucumber, a sprawling, white-flowered herbaceous vine (April-June); and kinnikinnick, the native ground-cover, related to manzanita (April-June).

In July, another cast of performers takes over: foxglove, fireweed; and goatsbeard.

Many of these flowers may be seen in other coastal parks and areas nearby. Some parks have colorful posters on display boards to help you identify common plants.

We hope this series of articles will help you spot and enjoy some of the floral wonders of the Oregon Coast.

On your marks, get your cameras, GO! □



More and more people are starting to botanize as a hobby.

To botanize is to study plants on a field trip or to explore for botanical purposes. This article highlights just a few of the wildflower treasures in state parks of the south coast.

Curry and Coos Counties share one of the most intriguing floras in Oregon. The Siskiyou region has its own species, found nowhere else in the world, and the balmy climate allows some of California's species to creep up on the coastline.

Do your own field investigations of Oregon wildflowers. Your reward will be to take in their beauty, study their mysteries, and feel renewed.

If you are ever tempted to take wildflowers in state parks, think of all the people who went before you and left

the flowers for you to enjoy. A good number of these plants are threatened or endangered. Many wildflower species require special ecological conditions and end up dying when transplanted to people's gardens.

Darlingtonia Wayside and Honeyman State Park are known for the California pitcher-plant with its carnivorous, cobra-shaped leaves. The chocolate-purple flowers, which bloom from June to July, are almost grotesquely beautiful. The Pacific rhododendron display in April and May is especially striking in these parks.

Four miles long, Bullards Beach State Park sports a rich array of wildflowers. The large, hemispheric heads and succulent leaves of yellow sandverbena of the Four-o'clock Family can be seen in the unstabilized dunes. Silvery phacelia's dark leaves, shimmering with silver hairs, are a photographer's delight the year around. Western blue-eye grass, a dainty member of the Iris family and the lovely tree lupine (from two to six feet tall), an introduced yellow-flowered plant from northern California, both bloom from April through July.

Regrettably, Bandon State Park has one of the healthiest stands of gorse or Irish furze on the Oregon Coast. Although the abundant flowers blanket the land in luscious yellow and sweeten the air with a rich coconut aroma from February to September, this European invader is a serious pest and an extreme fire hazard.

Many species of wildflowers decorate Cape Blanco State Park, notably Douglas' iris and golden iris (or innominata iris). Silvery phacelia grows near the parking lot on the bluff.

In the month of June, on the first half of the trail in Humburg Mountain State Park, visitors can see several interesting plants, including ghostly, wax-like Indian pipe and maidenhair fern.

Late April and May are the best times for wildflower enthusiasts to hike the 35-minute trail at Cape Sebastian State Park. Highlights are Pacific paintbrush, Douglas' iris (March through May), rein orchid, snow-queen, and black crowberry, which is a healthlike shrub. Cape Sebastian supports a population of large-headed goldfields, a summer-blooming, yellow daisy-like flower that is only found in coastal Curry County. These golden gems can also be seen at Samuel Boardman State Park.

A number of interesting wildflowers can be seen in Pistol River State Park, which borders the Pacific for three miles near the mouth of Pistol River. Sea-cliff stonecrop is a large and attractive succulent that grows on the sea stacks.

From May to September the yellowish flowers bloom above the star-shaped basal rosette of powdery leaves. The existence of this species is threatened in Oregon due to unscrupulous collectors.

Another beautiful, threatened wildflower, Wolff's evening primrose (June to October), grows across the highway from a historic marker. Large, yellow flowers bloom on a tall spike. Yellow monkey-flower (March to August), silvery phacelia, and spatula-leaved sedum (May to July) are also photogenic subjects.

Harris Beach State Park, our southernmost coastal park, has at least 68 species of native flowering plants, including round-leaved sundew, Labrador tea, beargrass, and ground-cone. April and May are good months to see Pacific rhododendron, western azalea, manzanita, and the dazzling shrub, blue blossom. Gorse—attractive, but noxious—is plentiful here.

The fragrant old-growth stands of western azalea at Azalea State Park, in Brookings, make it an appropriate site for the Azalea Festival each Memorial Day. A galaxy of white flowers, tinged with pink and yellow, grace the landscape from April through September.

Eight miles up the Chetco River is Loeb State Park which features majestic, old California laurel (*Umbellularia californica*) trees, mistakenly called myrtle trees. Their small, but prolific flowers can be seen from March to May. In April and May, visitors can see cow-parsnip, Oregon wood-sorrel and red columbine, a favorite of local hummingbirds. The tiger lily and foxglove add their bright colors in June and July. □

(These articles were reprinted with permission of the publisher from the April/May and June/July 1988 issues of Oregon Coast magazine.)

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EPSC Wildflower Posters & Pins Susan Ertel
P.O. Box 151, Mosier, OR 97042; 478-3576

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MEMBERSHIP

Membership Chair Mary Falconer
1920 Engel Ave. NW, Salem, OR 97302; 325-6479
Membership in the Native Plant Society of Oregon is open to all. Membership applications, renewals and changes of address (including old address and zip code) should be sent to the membership chair.

EDITING

Editor Jan Davis
2094 Seaver St., Portland, OR 97203; 245-7422

The NPSO Bulletin is published monthly. Copy to due by the 15th of the month & should be sent to the editor. Draw, criticism, photos, drawings, & non-copyrighted illustrations are welcome.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typeset; therefore typed, camera-ready copy is most appreciated. But no submission will be rejected because it is not typed. Please proofread & check facts. DEADLINE: 15th of each month. FORMAT: Copy should be typed in 4x inch wide columns, of any length. Author's name & chapter affiliation (or other organization) are typed at the end of the article. There is no standard paragraph treatment; one of three is suggested:

- * for long articles, double space between paragraphs, but do not indent the first word of the paragraph
- * for short articles or short paragraphs, when double spacing looks odd, indent the first word of the paragraph instead
- Type your own headlines, centered, all caps. In case of special format, e.g. plant keys, you are free to choose the layout.

CRITICAL: for each submission, provide

- * Title
 - * Author—specify whether byline is desired for name items
 - * Instructions as to whether item is to be used in entirety or accepted at editor's discretion
 - * source & date if item is not original
- ILLUSTRATIONS: black & white photos, ink drawings, woodcuts, halftones, et al. We welcome small doodles as well as larger efforts. Please give source & date, if not original.

SCIENTIFIC NAMES should follow Hitchcock & Maguire's Flora of the Pacific Northwest where possible. Use of both scientific & common names is encouraged. Genus & species names are underlined or italicized.

REUSE OF ORIGINALS: Manuscripts & illustrations will not be returned unless it is requested.

The Bulletin is published as a service to NPSO members & the public. Your suggestions & comments are always welcome.

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

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Bulletin of the

NATIVE PLANT SOCIETY of OREGON

To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

Volume 21 No. 9

September 1988

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CHAPTER NEWS

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine, so proper dress and footwear are essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage, and terrain. Your participation is at your own risk. Bring water and lunch.

Blue Mountain

For information, contact Bruce Barnes (276-5547).

Corvallis

For information, contact Dan Luoma (758-8063).

Emerald

10 Sept., Sat.

Field trip to the Mackenzie and Willamette Rivers to see the willows and grasses. Leave at 10 am from South Eugene High School, 19th and Patterson. Leader: Peter Zika (work 683-6495, home 369-2881). "Come and learn your willows."

10 Oct., Mon.

Meeting. Time to be announced, at Amazon Community Center, 2700 Hilliard St., Eugene. Slideshow on natural history of Costa Rica, by Marjorie Willis, NPSO State Vice-President and employee of Oregon State Parks Department.

High Desert

For information, contact Joyce Bork (389-5579).

Mid-Columbia

7 Sept., Wed.

Meeting. 7:30 pm at Mosier School. "Penstemon Program" presented by Bruce Meyers of Husum, Washington, who cultivates and hybridizes penstemons on his property and has locally studied this genus for years. He has slides as well as keys from the American Penstemon Society.

North Coast

1 Sept., Thurs.

Meeting. 7pm at State Office Building, 3600 3rd St., Tillamook.

11 Sept., Sun.

Field trip to Lees Camp. 1:30 pm.

For information, contact Clarence Maxwell (842-7023).

Portland

10 Sept., Sat.

Field trip to Indian Heaven. Leave at 8 am from Gateway MAX Park-and-Ride. Leaders: Elizabeth Handler (244-5320) and Carroll Dubuan. 8-mile hike at elevation up to 5100 feet.

13 Sept., Tues.

Meeting. 7 pm at First United Methodist Church, 1838 SW Jefferson St., Portland. Esther Hammond will present a program of the late Dr. John Hammond's pictures of Oregon wildflowers.

17 Sept., Sat.

Field trip to Elk Meadows. Leave at 8:30 am from Gateway MAX Park-and-Ride. Leaders: Jan and Dave Dobek (248-9242).

24 Sept., Sat.

Field trip to Mt. Hood Meadows. Leave at 9 am from Gateway MAX Park-and-Ride. Leader: Shep Wilson (228-7823).

1 Oct., Sat.

Field trip to Sheep's Canyon on southwest slope of Mt. St. Helens. Leave at 8 am from Lloyd Center parking lot nearest NE 16th and Clackamas. Leader: Charlene Holzwarth (284-3444). 6.4 mile hike.

Siskiyou

8 Sept., Thurs.

Meeting. 7:30 pm at Rm. 171, Science Building, SOSC. Mary Paytzell will give a program on "Butterflies of the Siskiyou."

Willamette Valley

19 Sept., Mon.

Meeting. 7:30 pm at First United Methodist Church, corner of SE Church and State Sts., Salem. (Use the Church St. entrance.) Wilbur Blum will present a multi-image slide show entitled "The Willamette Valley as the Settlers Found it." He will discuss the original landscape and flora of the valley and identify some alien species that you might have thought were native. Wilbur is considering writing a book on the subject.

No formal trips are scheduled for this month. However if there is sufficient interest, impromptu trips will be held. Notification will be by telephone tree. If you know of a good spot to visit in September, or want to be on the telephone notification list, call Clint Urey (743-2802) or Glenn and Barbara Holliday (371-1025).

There will be a mushroom field trip on October--details in the October *Bulletin*.

Wm. Cusick

For information, contact Rachel Sines (963-0674).

RED, WHITE & BLUE BERRIES

...and other fruits of the season, will be in a display by Portland chapter at the annual Wintering-in of the Oregon Historical Society at Bybee-Howell House on Sauvie Island.

Saturday, September 24, anytime between noon and 4 p.m., come with a picnic to enjoy the island autumn...the free cider, craft displays (candlemaking etc.), tours of the house and farm museum. Books, prints of old photos and a few food items will be for sale, otherwise all free. NPSO's display has drawn a lot of interest in three previous years.

From Hwy. 30, cross the bridge to Sauvie Is. and turn left, and proceed to signs for the house in view on your right.

Lecture on Tropics at Garden Club

Dr. William L. Theobald will give a lecture and slide presentation on "Helping Save and Understand the World's Tropics" Monday, October 3, at 1:30 pm, at the Portland Garden Club, 1132 SW Vista Ave., Portland. This lecture is one of the Portland Garden Club education series.

Dr. Theobald is Director of the Pacific Tropical Botanical Garden on the island of Kauai. The Garden's emphasis is on rare and endangered species.

IMPORTANT ADDRESS

Robert Meinke
Endangered Species Office
Plant Division
Dept. of Agriculture
635 Capitol Street NE
Salem, Oregon 97310-0110
378-6458

ANNUAL MEETING HIGHLIGHTS

Membership report:

Blue Mt.	23
Corvallis	50
Emerald	67
High Desert	37
Mid-Columbia	36
North Coast	15
Portland	247
Siskiyou	70
Willamette	60
William Cusick	13
Total	618

Sixty-five members attended the banquet dinner and annual meeting. Certificates of appreciation were presented to: Sara Barnum, Jan Dobak, Marge Eitinger, Mary Falconer, Barbara Fox, Russ Holmes, Charlene Holzwarth, Russ Jolley, Julie Kierstead, Rhoda Love, Esther McEvoy, Pat Rogers-Rochina, Marjorie Willis, and Shep Wilson.

Four Field Research Grants in the amount of \$400 each were presented to Paula Brooks/Stephanie Schultz, Wayne Rolfe, Carolyn Wright/Dave Gross, and Peter Zika. The Leighton Ho Memorial Field Botany Award (\$400) went to Jennifer Dirmeling of the University of Oregon. Mary Falconer announced that the Jean Davis Memorial Scholarship (\$1000) was awarded to Wayne Rolfe who will pursue his studies at Oregon State University.

The amendment to Article X of the By-Laws, as presented in the May issue of the *Bulletin*, was approved unanimously. After the business meeting, Susan Cochrane, coordinator of the State of California's Endangered Plant Program, shared insights as to how NPSO members could help Oregon's program succeed. She has found that a positive attitude towards the importance of native plants coupled with continuing involvement in public policy and educational efforts are most effective.

The Board of Directors approved a provision for non-membership subscription to the *Bulletin*. Agencies and organizations that want to receive the *Bulletin* without formal affiliation with our organization will be able to do so at the regular rate.

Bob Meinke spoke on the progress of the Oregon Endangered Plant Program (see the June issue) and urged members to be involved in field monitoring. This was in agreement with Jean Siddall's request that more people contribute to the work of the R&E Committee.

Sallie Jacobsen and Margie Willis gave a presentation on alternatives to planting *Ammophila arenaria* in the dunes. Their discussion of landscaping with natives set the stage for the next presentation by Dean Apostol and Tami Katz. They informed us about an upcoming seminar on using and managing for natives in the landscape. Various issues surrounding landscaping with natives will be addressed at the Oct. 3rd meeting in Portland. There was a great deal of discussion concerning plants dug from the wild to supply landscaping needs. NPSO opposes digging plants for the garden unless they are being salvaged. Our

guidelines encourage digging up plants in true salvage situations. The primary problem centers around how to determine if plants offered for sale were obtained properly and how to make our dominant position against digging clear to the public.

One-thousand dollars was donated to the Jean Davis Memorial Scholarship Fund principal by vote of the Board. This was done because the principal no longer generates enough interest to cover the scholarship. The next Board of Directors meeting will be Saturday, October 22, 10 AM, in The Dalles. A specific location with map will be announced in the next *Bulletin*.
— D. L.

WOODS, WETLANDS, AND WILDFLOWERS DESIGNING WITH NATIVES

On Saturday, October 8th, at the Rock Creek Campus of Portland Community College, there will be a one day conference on the subject of landscaping with native plants. This conference is being organized by the Cascadia Native Landscape Center and the Oregon Chapter of the American Society of Landscape Architects. Speakers will include, Fred Hall, chief plant ecologist for Region 6 of the U.S. Forest Service, Arthur Kruckeberg from the University of Washington, Dennis Wagner of the University of Oregon Herbarium, Julie Kierstead from Berry Botanical Garden, and others. Subjects to be presented and discussed will include: Regional plant geography of the Pacific Northwest, designing native landscapes, plants of promise, managing native plant communities, wetland restoration, and protection of native plant species. The purpose of this conference is to explore the major issues related to native plant landscaping and to build a foundation for future research and projects.

This conference should be of particular interest to those Native Plant Society members who are interested or involved in projects related to restoration or management of native plant communities. The cost for attending is \$15.00 (\$10.00 students and A.S.L.A. members). A box lunch is \$5.00. Pre-registration is not mandatory, but it is advised since space will be limited. Make checks payable to: Cascadia Native Landscape Center, 1143 S.E. Umatilla, Portland, Or. 97202. For further information call 236-0395.

Rare Buckwheat Rediscovered After 87 Years

Two Oregon naturalists, working in cooperation with the State Department of Agriculture's Endangered Species Program in Salem have succeeded in rediscovering a plant thought by many botanical authorities to have become extinct. Three small populations of the Golden Buckwheat (*Eriogonum chrysops*), a low, shrubby species last observed some 87 years ago, were located in late May by Carolyn Wright and Dave Gross in the Dry Creek area of northern Malheur County. Wright, a biological consultant and graduate student at Oregon State University, and Gross, a U.S. Forest Service employee, live in Tygh Valley. Both are avid botanists well acquainted with the flora of eastern Oregon and are members of the state's Native Plant Society.

The Golden Buckwheat, a wild species distantly related to cultivated buckwheat grown as a grain crop, belongs to a family of plants found predominantly in arid climates in North America. Many of the wild buckweats have very limited distributions, often the consequence of special adaptation to unusual volcanic soils. As a result, recent intensive searches for the Golden Buckwheat, dating to the mid-1970's, often concentrated on such habitats. Field work had focussed in Harney County since the only previous collection of the species, by William Cusick in 1901, was taken from an area southeast of Burns on the "Northern Stein's (Steens) Mountain" according to the original records. Cusick, a pioneer cattle rancher from Union, Oregon, was a prominent early day amateur naturalist who traveled throughout the state at the turn of the century in search of botanical novelties.

"The inability by botanists to relocate the original collection locality for the Golden Buckwheat was frustrating," says Bob Meinke, coordinator for the state's Endangered Plant Species Program. "Since we had so little collected material upon which to base conclusions a theory was eventually circulated that the plants collected by Cusick might merely be a variation of some other, possibly common, wild buckwheat from the area, and therefore relatively unimportant. The recent rediscovery conclusively shows that they do represent a distinctive, rare species worthy of management consideration."

Wright and Gross were able to relocate the species after piecing together many bits of information. After several summers searching in the Steens Mountains area proved fruitless, the pair decided to try and get additional details about Cusick and his 1901 travel itinerary. A crucial piece to the puzzle came when they learned of the existence of an old stage coach line that ran south from Vale, Oregon, to Winnemucca, Nevada, by way of Harper (in Malheur County) and then along the east base of the Steens Mountain. Taking a trip to Harvard University, where many of Cusick's collections were deposited, the couple examined notes and labels from his 1901 collecting trip. They discovered that some plant collections labelled "Northern Stein's Mountain" were additionally noted as being taken at 4,000 feet elevation. "That seemed to indicate a location other than what we commonly think of as the North Steens, where elevations are 5-6,000 feet" said Wright. "We thought maybe we should look farther north."

The big break came during archival work at the University of Oregon, which houses many of Cusick's early field notebooks. It was within these records that the pair was able to ascertain that Cusick had been in the Dry Creek area on June 10, 1901, the day Golden Buckwheat was collected. "We knew (at that point) where to look," commented Wright. "Cusick had actually extended the definition of the Steens Range about 45 miles beyond where we think of them today."

Within two hours of beginning to search in the Dry Creek area on May 30, Wright and Gross had discovered their quarry. "We think we pretty much retraced Cusick's route because we found each of the other plants he collected the day he discovered the Golden Buckwheat populations," said Wright. The species was found growing on barren hilltops in three separate areas, on a volcanic surface known as welded tuff. An estimated 5,000 plants were observed.

Although the species is located in a very limited area, it is unlikely it will be formally designated as threatened or endangered in the near future under the provisions of the recently passed Oregon Endangered Species Act. "The habitat of the species is not easily impacted by grazing or other ranching activities," said Meinke, after a site inspection in June. "We will continue to monitor the known populations, however, for disturbance or decline in numbers, and may work with the Bureau of Land Management in developing management guides to ensure the plant's perpetuation."

Hurrah! Carolyn and Dave, Mid-Columbia Chapter members! These two also rediscovered the obscure buttercup, *Ranunculus occidentalis* in Oregon. See NPSO Bulletin, March 1986.

by Rhoda Love

The NPSO Board, at its January meeting, established a special fund in memory of LEIGHTON HO, former Emerald Chapter President, who drowned in a tragic accident in Hawaii December 20, 1987 (see NPSO Bulletin, Feb., '88, p. 13). Leighton was a tireless worker in the cause of Oregon's rare plants and endangered habitats and he is very much missed.

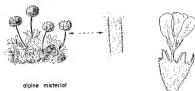
Monies have been pouring into the fund from Leighton's family in Hawaii and from his many friends. According to Daphne Stone, NPSO Treasurer, the fund had reached \$1,995.53 by June, 1988. The Leighton Ho Fund is to be used for NPSO Summer Research Grants. It is hoped that the fund will continue to grow and that, with wise investment, it can be made to provide NPSO summer grants for a number of years to come. Not only will the Leighton Ho Fund provide needed monies for research on Oregon plants, but it will help to keep Leighton's name and memory alive.

The summer grant is now called the Leighton Ho Memorial NPSO Grant, and the 1988 recipient, whose name was announced in a brief ceremony at our Annual Meeting at Silver Falls, June 25, is JENNIFER DIMMLING, of Eugene, who will use the \$400 grant to study Sidalcea cusickii in the Coast Range.

We hope that the fund will continue to grow so that the Leighton Ho Grant can be awarded for many years in the future. Friends of Leighton, who have already contributed are encouraged to contribute again, perhaps on an annual basis, and other friends of Leighton and of NPSO and its important work, who have not yet contributed, are encouraged to do so. Any Bulletin reader who wishes to contribute to the Leighton Ho Fund, may send a check, made out to NPSO, to:

Leighton Ho Fund
c/o Daphne Stone, Treasurer
Native Plant Society of Oregon
1934 Cleveland St.
Eugene, Oregon 97405

The following family members and friends of Leighton have contributed to the fund thus far: Aileen and William Ho, Karen Nishimura, Jannell Sorensen, Margaret Hutchinson, David Calderwood, Stanton and Joan Cook, Rhoda and Glen Love, Evelyn and Lee Everett, Elaine Nishimura, Gary Hade, Sandy Poinsett, Janice and J. W. Gerdesmann, Fanny and George Carroll, Thomas E. Mallory, Daphne and Jeffrey Stone, Wanda Manning, Jeff Herbert, Linda Romans, Cheryl Suter, Marcia Harlackner, Carlos and Linda Cabera, Jolene and Joel Boucock, Marcia Locke, Kim Stone and Bob Maeda, Jacques Larsen, Rita Bowman, Judith McClain, Peggy Fitzgerald, Timmie Sigornia, Grant Beardsley, Jo Hudleston, Nancy Scott, Roberta Roche, Marcia Brooks, Marissa Wampler, Steve Erfurth, Julie Schiller, Ron Davis, Fran Ross, Joel LeCaptain, Cenny Haberly, Cheryl Wobbe, Amy Crook, Bev Lesch, Mari Baldwin, Steve, Bethel and Lisa Edens, Jerry Wood, Leslie Weaver, Freeman Rowe, Gail Baker, McKenzie Flyfishers, Margaret Markley, Nadine Smith.



alpine material



E. chrysops

(reprinted from Hitchcock et al., *Flora of the Pacific Northwest*, with permission from the publisher)



The Berry Botanic Garden will hold its Fall Plant Sale at Miller Hall, World Forestry Center, Portland, Oregon, on Saturday, October 1st. From 10:00 am to 3:00 pm.

Public is welcome. Free admission.

If you're looking for choice bulbs for fall planting, unusual alpine plants for rockeries, hard-to-find perennials for borders, and select trees and shrubs, come to this sale! Plants are grown by local specialty nurseries and by the Berry Garden from its own collections.

This fall's sale will also feature seeds from native and garden sources, a fine assortment of garden books, alpine troughs, pots, botanical prints, and garden tools.

The plant sale is a fund raising activity for the non-profit Berry Botanic Garden and helps to further the Garden's work in the areas of plant conservation, horticultural education, and botanical research.

The Cobra Lily

ROBERT HORNBACK

To even the most insensitive observer, the first glimpse of this plant must surely be an experience never to be forgotten. Complete with an expanded hood and forked tongue, the leaf resembles nothing so much as a yellow-green cobra poised to strike. So great is the similarity that it seems strange indeed that this is a case of pure accident of design rather than of intentional mimicry...

Adrian Slack, Carnivorous Plants

One of the most bizarre of western plants, the cobra lily (*Darlingtonia californica*) is also one of the largest and showiest of carnivorous plants (sometimes called insectivorous, they prey consisting mainly, but not entirely, of insects). But unlike the more famous carnivores such as *Venus' flytrap* (*Dionaea muscipula*), which is rare in nature although easily propagated in the greenhouse, the cobra lily resists domestication. To be fully appreciated, it should be seen as it grows in the wild.

At the Darlingtonia Botanical Wayside, a small state park on the central Oregon coast, cobra lilies grow by the hundreds in a protected bog that is easily viewed from a wooden observation deck. Here, near the northernmost limit of its range, the plant achieves astonishing size in the mild coastal climate.

The cobra lily is not, however, limited to maritime regions. Showing surprising adaptability, it occurs as far as 130 miles inland, flourishing in isolated spots among the Siskiyou Mountains of southwestern Oregon. Its range also extends south to Truckee Pass in California's northern Sierra Nevada, where it can be found at elevations as high as 8,500 feet, and it is common throughout the Klamath Mountains of northwestern California. It was in the Klamath, in fact, that the plant was first discovered. In October 1841, while traveling from Oregon to San Francisco, William Brackenridge, assistant botanist on the Wilkes Expedition, found cobra lilies growing in a marsh near a small tributary of the upper Sacramento River, a few miles south of Mt. Shasta.

John Torrey described the species in 1853, placing it in a new genus that he named for his friend, Dr. William Darlington. *Darlingtonia californica* is the only species in the genus, and the only western representative of the pitcher plant family (Sarraceniacae), whose other members are found throughout eastern and southeastern North America and in Venezuela. The cobra lily is, of course, not really a lily; it's not even a monocot. But its unusual appearance so excites the imagination that the plant has earned such colorful names as cobra orchid, cobra plant, and calf's head.

The menacing-looking "cobras" are the plant's highly modified tubular leaves, which rise directly from creeping perennial rhizomes anchored by short, fibrous roots. Growing in dense groundcover, the tube-like leaves lie along the ground or stand upright to a height of two to three feet. Each tube, as it widens gradually from base to top, twists a full 180 degrees. This torsion, and a narrow, keel-like "wing" that spirals along the length of the tube, suggest the

structural strength necessary to support the dome-like inflated hood that crowns the tube's apex. Beautifully sculptural, each tube represents an impressive example of natural engineering, since a large hood can become bigger than a softball.

Facing outward from the center of the rosette, the hood dangles a showy, red, fishtail-shaped appendage (the blade of the modified leaf) at the outermost edge of its lip. Immediately behind this appendage is the narrow mouth of the tube, facing downward but above the wing. The hood is a yellow-green latticework of veins, in the interstices of which are numerous translucent windows. These form miniature skylights, called *areolae*, that allow sunlight to enter the tube. Composed of glassy cells completely lacking chlorophyll, the *areolae* transmit light so well that the hoods glow like lamps when the plants are backlit in the morning or late afternoon.

Scattered over the outside surface of the tube are tiny glands that secrete sugary nectar. These nectaries are especially numerous on the wing and the fishtail appendage. Inside the tube the glands are concentrated on the nectar roll—a flap of tissue that curls inward around the rim of the mouth—and are thinly scattered throughout much of the interior. All across the underside of the hood are small, sharp, backward-pointing hairs. Long, soft, downward-pointing hairs line the lower wall of the tube, while the remaining surface is smooth and slippery. The bottom of the tube is filled with fluid secreted from the wall.

Although delicate and attractive, the cobra lily's velvety flowers are in no way as showy as its leaves. Appearing in late spring or early summer, they rise on straight stems that carry them usually just below but sometimes above the tallest hoods. Each nodding flower is borne singly and has five long yellow-green sepals that arch out around a tight ring of five somewhat shorter dark purple petals. Pollinating insects enter the flower through any of five small openings near the base of the petals. Inside the petals, the stamens are arranged in a close ring around the top-shaped ovary; there are five stigmas on the short, stout style. The abundant seeds, which mature within ten weeks of fertilization, are small, tan, and fuzzy.

Puzzle of the Cobra Lily

Charles Darwin, who published his *Insectivorous Plants* in 1875, conducted no research on *Darlingtonia* but concluded "from the excellent observations" of two amateur American botan-

ists working in California that it and the other pitcher plants were almost certainly carnivorous. "though the fact can hardly be considered as yet fully proved." This characteristically conservative statement set him apart from earlier researchers, who had suggested that pitcher plants were none other than divinely placed water fountains for thirsty birds. Many years passed before botanists began to understand how these intriguing plants were able to lure, trap, and digest their prey. The cobra lily, because of its geographic isolation and the fact that its structure is distinctly different from that of other pitcher plants, proved an especially difficult puzzle.

Some of the most detailed and comprehensive studies of *Darlingtonia* were conducted during the 1870s by the frontier naturalist Rebecca Merritt Austin, who made careful observations of the pitcher plants growing near her home in Plumas County, California. She mapped the plants' nectaries, noted their pollinators, and discovered much of what we now know about the digestive fluids in their tubes. Her scientific dedication even extended to sitting among the plants throughout a summer thunderstorm to confirm her belief that rain does not enter the pitchers.

Writing early in this century, Luther Burbank presented some unusual conclusions about how the California pitcher plant functioned. For, although he prided himself on his keen powers of observation, the famed horticulturist failed to notice the plant's nectaries (an excusable oversight, as the enticing fragrance emitted by these glands is much more noticeable to insects than to humans). Burbank hypothesized that insects were attracted to the plant because it seemed to offer "a haven from the sun and rain... in a cozy chamber, well-lined and weatherproof."

Botanist Mary Elizabeth Parsons, writing at the same time as Burbank, described the cobra lily in her popular *Wild Flowers of California*. Her detailed observations, while more accurate, were colored by an even stronger anthropomorphism:

Nothing could be cleverer than the nicely arranged wiles of this uncanny plant for capturing of the innocent—yes, and of the more knowing ones—of the insect world who come within its enchantment. No urge in his castle has ever gone to work more deliberately or fiendishly to entrap his victims while offering them hospitality, than does this plant-organ. Attracted by the bizarre yellowish hoods or the tall nodding flowers, the foolish insect alights upon the tube and commences his exploration of this fascinating region. He soon comes upon the wing, which often being smeared with a trail of sweets, acts as a guide to lure him on to the dangerous

entrance to the hoodlike dome. Once within this hall of pleasure, he roams about, enjoying the hospitality spread for him. But at last, when he has partaken to satiety and would fain depart, he turns to retrace his steps. In the dazzlement of the translucent windows of the dome above, he loses sight of the darkened door in the floor by which he entered and flies feebly upward, bumping his head in his eagerness to escape. He is stunned by the blow and plunged downward into the tube below. Here he struggles to rise, but countless downward-pointing bristly hairs upbraid him to his fate. He sinks lower and lower in this "well of death" until he reaches the fatal waters in the bottom, where he is at length ingulfed, adding one more to the already numerous victims of this diabolical plant.

Among the plant's victims Parsons listed ants, bees, flies, hornets, butterflies, grasshoppers, moths, and beetles. Flying insects are lured to the trap by nectaries on the fishtail appendage—a perfect landing platform—and crawling insects enter the tube by climbing the long nectar-coated ramp created by the spiral wing. Burbank added frogs, toads, mice, and even small birds to this grisly potpourri, noting that their bones were sometimes found in the tubes. These unlucky creatures are secondary victims of the plant; entering the tube to feed on trapped insects, they find that they themselves are unable to escape.

Unlike most pitcher plants, the cobra lily produces no digestive enzymes. The bodies of its victims are decomposed by the action of bacteria living in the fluid at the bottoms of the tubes and creating a nutritive solution that is slowly absorbed by the plant. Other pitcher plants open their lids just before a storm, which enables them to collect rainwater. But the cobra lily can't pull back its hood, so it fills its tubes with secretions from its inner walls; young tubes contain fluid even before they open. The level of the fluid inside a tube tends to stay above that of the accumulated food, with the secreting action apparently occurring in response to the amount of acidity and concentrated nitrogen in the tube.

Because this acidic broth contains no wetting agent (that is, nothing to quickly remove buoyant oils from the bodies of captured prey), it is harmless to creatures that can swim. So the cobra lily does provide a "cozy haven" for miniature aquatic communities of mites, maggots, and microscopic protozoans. One of these tiny creatures, the water mite *Saracnomyces darlingtoniae*, is not known to live anywhere else. It has been suggested that the cobra lily's living fauna has developed a symbiotic relationship with its host, helping to break down insects for easier absorption by the plant.

In trying to account for the cobra lily's carnivory, scientists have suggested that the plant's animal diet supplies it with the essential nitrogen that is lacking in its soil. It follows that, having developed this novel mode of food-gathering, these plants can exploit nitrogen-poor environments where there is little competition from ordinary plants. But while the cobra lily, like most terrestrial carnivorous plants, flourishes in nitrogen-poor soils, the

ecosystems in which it is found are certainly not devoid of competitive plants. It usually grows in strongly acidic sphagnum bogs kept cool and moist by slow-running water from a creek or spring. The sphagnum moss forms a thick sponge over the nutrient-poor soil—usually derived from serpentine rock—where its crowded, upright stems create a strong capillary action that draws water upward through the dead sphagnum below into the living mossy "turf" above. These boggy ecosystems are so specialized that they are sometimes referred to as Darlingtonia seeps.

Cobra lilies have neighbors such as sedges, deer fern (*Blechnum*), skunk cabbage (*Lysichiton americanum*), thimbleberry (*Rubus parviflorus*),

western hemlock, and red cedar, as well as ericaceous shrubs such as rhododendron, Labrador tea, salal, huckleberry, and wild cranberry. It is also associated with two other carnivorous plants: the round-leaved sundew (*Drosera rotundifolia*), and more rarely, the common butterwort (*Pinguicula vulgaris*).

Cultivating Cobra Lilies

From the cobra lily's unusual natural habitat, it is easy to understand why the plant is such a challenging subject for gardeners. It is poorly adapted to the mixed terrarium plantings commonly used for displaying carnivorous plants, but can sometimes be grown successfully outdoors in partially shaded locations throughout the milder western climate zones. Although cobra lilies do not require running water around their roots, they must be kept cool and moist at all times (some growers drench their specimens with ice water to keep them healthy in warm weather) and they need high humidity to develop their fullest size. For best results, the plants should be potted in live sphagnum moss and set in shallow trays of water. Specimens are most readily available as sections of mature adult plants, which are the least difficult to establish. They may also be propagated from root and rhizome cuttings, from whole young leaves, and, with great patience, from seed.

Any would-be grower of cobra lilies should be warned that most commercially available specimens of the plant are collected illegally in the wild. Conscientious gardeners can, however, locate one or two domestic mail-order sources for greenhouse-grown specimens. The plant is listed as a threatened species, which places it just a step away from the endangered category. Even so, advertisements in pulp newsmagazines have promoted this unfortunate plant as a potent, easily grown charm against household insect pests, so collection of the plant will no doubt continue. Most of these collected specimens will die slow and useless deaths in environments to which they are totally unsuited—a tragic waste, especially when set against the astonishing beauty afforded by a cobra lily growing in its natural home. ♀

Sources:

Seed-grown *Darlingtonia* plants are available from the Sekiyou Rare Plant Nursery, 2825 Cummings Road, Medford, OR 97501. Other sources of carnivorous plants include: Plant Shop's Botanical Garden, 2807 Topham Street, Redwood, CA 94338; and Country Hills Greenhouse, Rte. 2, Corning, OH 43534. The International Carnivorous Plant Society is at the Fullerton Arboretum, Department of Biology, California State University, Fullerton, CA 92634.



Darlingtonia californica

PLANT SURVEYS: BEGINNERS' LOOK

Eight of us met Lois Kemp at Ripplebrook district office on June 15 to join her in a sensitive plant survey, one of the steps in Forest Service planning process for a timber sale. These surveys, plus the updating and revision of Sensitive Plant Field Guide (it's beautiful, don't ask, it's only for USFS personnel) and handbooks, are Lois' 1988 projects for Mt. Hood National Forest. Sensitive plants: those rare, endangered or threatened to any degree.

Years of field work is compressed into the handbook, listing 49 Sensitive Plant species for MNHP. Separate charts showed us habitats, flowering times, colors, families and indicated that five of the 49 were of documented occurrence, 14 suspected, in the Bear Springs district where we were going.

So, equipped with GS and aerial maps and the handbook pages appropriate for our search, we followed Lois down Roads 46, 42, 4220 and 4240013/270 into T75 R8E Sec. 11, the Bow Timber Sale, Units 1 through 14.

For the most action in one day, a loop through Units 6, 7 and 4 looked promising. Unit 6 proved to be a dry forest of Douglas fir, western and mountain hemlock, noble and silver fir, some blowdown, not enough rhododendron and vine maple to hamper us or obscure the clintonia, linnaea, pyrolas etc. Our targets were more apt to be in wet forest, meadows, dry cliffs, grassland or alpine slopes. But, Lois reminded us, "Look at everything...you never know!"

Unit 7 was in similar forest until we neared the west boundary, next to Trapper Springs Meadow. Here was a bog within a generally forested area, one of the specified habitats. Yew, cedar and Engelmann spruce led us into a swamp/bog of sphagnum moss, caltha...and while the rest of us were distracted by the beauty of *Kalmia occidentalis* in its prime, Esther Kennedy concentrated on the task we came for, making the find of our day: one of the beautiful bushy club-mosses, threatened in Oregon, *Lycopodium annotinum*.

While Esther began to fill out the lengthy sighting form, Lois directed the rest of us, after flagging the site thoroughly, to hunt for other populations (several were found) and to check distance from Unit 7 boundaries.

Although not within the unit, most populations of LYAN (first two letters of genus and species) were within from six to 20 feet of the boundary. Logging could not avoid the plants and would surely destroy this habitat. The spring-fed stream feeds Warm Springs River. In the final space of the sighting form, for remarks and recommendations, our request was to amend the

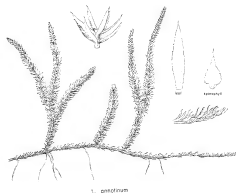
unit boundary to preserve this part of Trapper Springs Meadow.

Piece of cake? We went right out and found an important plant? Plant surveys are not often so neatly done. We had Lois guiding us. Unit boundaries were already marked. Normally the botanist has a map and must determine the proposed sale location. We were in relatively open and level terrain and in good company. Lois, and the five part-timers who comprise the survey crew for MNHP this summer, go alone, up/down steep ridges, over/under blowdown, relying on compass to find the way home. Two-way radio is a required companion for emergency. Many rough scrambling days may pass without a "find."

We came home with great respect for the work of these survey folks. A figure that sticks in mind: in 1987 53 sightings of 17 Sensitive Plant species were made in MNHP projects (roads, sales, gravel pits etc.) In every case the protection measures suggested by the botanist were followed.

Now here's the postscript to our day. Lois reports that the boundaries of Bow Unit 7 have been amended to leave our LYAN colonies undisturbed.

--Louise Godfrey



L. annotinum

(Illustration from Hitchcock et al., *Flora of the Pacific Northwest*; used with permission from the publisher)

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 Membership is the Native Plant Society of Oregon is open to all. Membership applications, renewals and changes of address (including old address and zip code) should be sent to the membership chair.

DELIVERIES

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The 1990 Bulletin is published monthly. Copy is due by the 15th of the month & should be sent to the editor. (Poem, articles, photos, drawings, & non-vegetative materials are welcome.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not typeset; therefore typed, carbon-copy copy is most appreciated. But no submission will be rejected because it is not typed. Please proofread & check facts.

DELIVERIES: 15th of each month
FORMAT: Copy should be typed in 4x inch wide margin, of any length. Author's name & chapter affiliation (or other organization) are typed at the end of the article. There is no standard paragraph treatment; one of these is suggested:
 * for long articles, double space between paragraphs, but do not indent the first word of the paragraph
 * for short articles or short paragraphs, when double spacing looks odd, indent the first word of the paragraph instead
 Type your own headline, centered, all caps. In case of special format, e.g. plant keys, you are free to choose the layout.

DELIVERIES: For each submission, provide
 * title
 * author—specify whether byline is desired for each item
 * instructions as to whether item is to be used in entirety or excerpted at editor's discretion

* source & date if item is not original
ILLUSTRATIONS: Black & white prints, ink drawings, woodcuts, halftones, et al. We welcome small doodles as well as larger efforts. Please give source & date, if not original.

SCIENTIFIC NAMES: should follow Hitchcock & Maguire's *Flora of the Pacific Northwest*, where possible. Use of both scientific & common names is encouraged. Genus & species names are underlined or italicized.
RETURN OF ORIGINALS: Manuscripts & illustrations will not be returned unless it is requested.

The Bulletin is published as a service to NPSO members & the public. Your suggestions & comments are always welcome.

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Bulletin of the

NATIVE PLANT SOCIETY of OREGON

To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

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CHAPTER NEWS

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine, so proper dress and footwear are essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage, and terrain. Your participation is at your own risk. Bring water and lunch.

Blue Mountain

For information, contact Bruce Barnes (276-5547).

Corvallis

10 Oct., Mon.

Meeting. 7:30 pm at Rm. 4083 Cordley Hall, OSU, Corvallis. Program by Peter Zika and Carol Savonen. "Natural History of Mt. Kilimanjaro: Climbing from Thorn Forest to Glaciers on Africa's Highest Peak."

29 Oct., Sat

Field trip to the western Cascades for a mushroom foray. Contact Dan Luoma (758-8063) to sign up.

Emerald

10 Oct., Mon.

Meeting. 7:30 pm at Amazon Community Center, 2700 Hilliard St., Eugene. Slide show on Natural History of Costa Rica by Marjorie Willis, State NPSO Vice-President and employee of Oregon State Parks Department.

High Desert

For information, contact Joyce Bork (389-5579).

Mid-Columbia

5 Oct., Wed.

Meeting. 7:30 pm at Mosier School. "Adirondack Wildflowers" will be the feature program presented by Mike Fahey, member of both Oregon and Washington Native Plant Societies.

2 Nov., Wed.

Meeting. 7:30 pm at Pietro's Pizza Place, 3320 W 6th, The Dalles. Carolyn Wright and David Gross will relate their experience in the discovery of the previously presumed extinct Golden Buckwheat (*Eriogonum chrysogon*). Come earlier, 6:30 pm, for a no-host pizza dinner.

North Coast

For information, contact Clarice Maxwell (842-7023).

Portland

1 Oct., Sat.

Field trip to Sheep's Canyon on southwest slope of Mt. St. Helens. Leave at 8 am from Lloyd Center parking lot nearest NE 16th and Clackamas. Leader: Charlene Holzwarth (284-3444). 6.4 mile hike.

11 Oct., Tues.

Meeting. 7 pm at First United Methodist Church, 1838 SW Jefferson St., Portland. Esther Hammond will present a slideshow on Oregon Wildflowers. This was postponed from September.

15 Oct., Sat. **Field trip** to Lolo Pass. Leave at 9 am from K-Mart parking lot at Milwaukie Expressway and 82nd Av. Leader: George Lewis (292-0415).

29 Oct., Sat. **Field trip** to a surprise destination for fall color. Leave at 9 am from Gateway MAX Park-and-Ride. Leader: Esther Kennedy (287-3091).

Siskiyou

13 Oct., Thurs. **Meeting.** 7:30 pm at Rm. 171, Science Building, SOSC. Presentation by Dr. Frank Lang, Professor of Botany at SOSC, about local ferns, their biology and ecology.

Willamette Valley

12 Oct., Wed. **Work party and tour** at the Natural Resources Area, State Fairgrounds, at 5 pm. Enter through the red gate on 17th. Come and see the new native plant landscaping exhibit created by the Willamette Valley Chapter for the Wish and Wildlife Department. Help prepare the plants for winter. Some need a wetland home until next summer. Call Margie Willis (581-6073) or Pat Rogers-Rachna (769-4669) if you have some marshy property.

17 Oct., Mon. **Meeting.** 7:30 pm at First United Methodist Church, corner of SE Church and State Sts., Salem (use the Church St. entrance). Jake Hurlbert, amateur mushroom enthusiast, will lead a workshop, "How to Identify Edible and Poisonous Mushrooms of the Willamette Valley and Cascades," using slides and study guides. Bring mushrooms for identification. See details on Oct. 22 faray below.

22 Oct., Sat. **Mushroom foray.** Meet at 8 am at north end of Mission St. K-Mart parking lot to form mushroom hunting groups. Separate to search for and collect mushrooms. Do not dig, just collect entire fruiting body. This is not harmful to the organism, since most of its tissue is underground. Meet again at 11 am at the picnic area at Marion Forks Hatchery on Highway 22 for identification. Consumption of mushrooms is at your own risk! Bring lunch, wax paper, paper bags, and a mushroom guide if you have one. call Jake Hurlbert (585-1672) for information.

Wm. Cusick

----- For information, contact Rachel Stines (963-0674).

"Peck" For Sale!

A copy of *Peck's Manual of the Higher Plants of Oregon* (Second Edition) in excellent condition is available for sale. Call Dave Dobak (246-9242).

Volunteers Wanted

Plans are now being formed for an Environmental Science Explorer Post in the Beaverton area. Sponsored by the Tualatin Hills Park and Recreation District, the post will be based at Tualatin Hills Nature Park (formerly St. Mary's Woods). Membership will be open to young men and women, 14 to 20 years old, who are interested in any aspect of Nature Study as a hobby or potential career.

But before this can happen, volunteer adult leaders are needed. This includes a Post Committee (chairman, post advisor, assistant advisors, secretary, etc.) who are willing to serve on a regular basis and also consultants who would share their particular expertise by speaking, leading, or demonstrating at one or two meetings. If interested in helping with this program, please contact THRPD (645-6433) or Kevin Harding (649-5372).

WILDFLOWER PHOTOGRAPHY DISPLAY AT OMS!

A series of vivid close-up photographs by Claire Siddall of native Oregon wildflowers from the Columbia River Gorge to high alpine meadows will be on display at the Oregon Museum of Science and Industry in Portland from October 1 to December 4, 1988.

Wildflower Seed Catalog Offered

The New England Wild Flower Society offers for sale more than 150 varieties of wildflowers and ferns in their *1989 Seed List*. Included are natives for woodland, wetland, and meadow gardens.

Seed sales close March 15, and all requests for the *1989 Seed List* must be received no later than March 1. Send a self-addressed envelope (#10 business size) with 45 cents postage to:

Seeds
New England Wild Flower Society
Garden in the Woods
Hamerway Road
Framingham, Massachusetts 01701

1988 Rare Plant Conference

Every other year a conference is held to discuss the status of rare plants in Oregon. This information is used in part to update the botanical section of the booklet *Rare, Threatened or Endangered Plants and Animals of Oregon*. Specific species are recommended for addition, deletion, or change of status. In addition, this year we will discuss the new state Endangered Species Act and the 16 plant species proposed for state listing through this Act. This meeting will allow for informal input and discussion to the Department of Agriculture.

This one-day conference -- co-sponsored by the Oregon Natural Heritage Data Base, the Oregon Department of Agriculture's Endangered Plant Office, and the University of Oregon Herbarium -- will be held at the Erb Memorial Union on the University of Oregon campus at Eugene on Saturday, November 12, 1988. If you have information on the status of any plants on these lists or have species which may need to be added, please come. All interested people are welcome to attend. Previous participants will automatically receive a notice and tentative agenda.

For more information about this conference, please contact one of the following people:

Sue Vritlakos; Oregon Natural History Data Base
1205 N.W. 25th Ave.; Portland, Oregon 97210
229-5078

Bob Melinka; Endangered Species Program, Plant Division,
Oregon Department of Agriculture
635 Capitol St. NE; Salem, Oregon 97310-0110
378-6458

Dr. Dave Wagner; Biology Department,
University of Oregon
Eugene, Oregon 97403
686-3033

If you can't attend but wish to furnish information for discussion please send your information to one of the people mentioned above.

Where Are They?

Barbara Ertter is working on the genus *Horkelia* in the Rosaceae. She is particularly interested in locating populations of *H. congesta*. Its habitat is listed in Hitchcock *et al.* as: "Open, sandy or rocky flats or sparsely wooded areas; Willamette Valley ... southward to the Umpqua and Rogue R. valleys, ... Apr. - June."

Please send location information to:
Dr. Barbara Ertter
University Herbarium
University of California
Berkeley, CA 94720

— D. L.

NPSO BOARD MEETING

Mosier School

Mosier, OR

Saturday, October 22, 1988 10 a.m.

The Mosier School is two right turns
just off Freeway Exit 69.

"You can't miss it"



SEND AGENDA ITEMS TO
DAN LUOMA

Coffee and refreshments provided.
Bring a sack lunch.

New Forest Service Botanist

Wayne Rolfe, an active member of NPSO and past president of the Siskiyou Chapter, has been selected as the botanist for the Rogue River and Siskiyou National Forests. Congratulations to Wayne and the U. S. Forest Service. Hopefully, there will soon be a botanist to oversee the botanical resources of each National Forest.

As a related development, the Jean Davis Memorial Scholarship Committee is pleased to announce another outstanding botany student will be able to receive this scholarship. Tom Kay, current president of the Corvallis Chapter, is studying a rare endemic of Olympic National Park: *Asparagus australis* var. *olympicus* (A. cotoni). Tom will use the scholarship to continue his studies under the guidance of Dr. Ken Chambers at Oregon State University.

— D. L.

STATE ENDANGERED SPECIES PROGRAM UPDATE

With the 1988 field season now over, it seems appropriate to briefly review some of the recent activities and accomplishments of the state's new endangered species program in Salem. Department of Agriculture botanists have visited many areas of the state this summer, looking to lay the groundwork for future conservation efforts. Although this first year has been relatively fast-paced, progress has been made in several areas, including the pursuit of Federal funding support, a push for additional state dollars, the initiation of research projects, and the preparation of a first list of species to be proposed for protection under the Oregon Endangered Species Act.

The fiscal issue is always a crucial one for a program such as ours. This is why we are particularly gratified by recent positive responses from Federal agencies from whom we are soliciting funding collaboration for sensitive species projects next year. Over three-quarters of the National Forests in Oregon have already indicated that they are submitting proposals to help finance joint studies in 1989, and several BLM Districts have expressed interest as well. We are also encouraged by the prospects for increased state funding during the next biennium, which may allow us to expand from our current permanent staff of one position. None of these proposals are as yet approved, of course, and we'll have to wait several more months before we know their outcome. A few letters have been written to the Governor and members of the legislature on behalf of the program, and this is appreciated. It's amazing the impact such correspondence can have on appropriations decisions.

Several projects have been started this summer by state employees, some being expansions of work initiated in previous years and others brand new. In addition to considerable field research, computer analyses and biochemical investigations are figuring prominently in these studies. For example, we are learning about the interactions between plant density and pollination, seed development, and flower predation for Baker County's *Haplopappus cadiatus*, information that may help us in predicting what habitat conditions are most suitable for population vigor. With help from a lab technique known as enzyme electrophoresis, we have found out that the Grant County endemic *Luina serpentina* is probably an ancient relict related to a Coast Range species, and that it has extraordinarily low genetic diversity. The evidence suggests that all populations are virtually identical genetically, potentially leaving the species little flexibility in the face of disturbance or climatic change. We have investigated the effects of human trampling on the reproduction of *Lomatium greenmanii* on the summit of Willows County's Mount Howard, which may receive as many as 600 visitors a day during the summer. Continuing studies of rare *Eriogonum* species in southwest Oregon are shedding light on the changes populations go through from year to year, and have also resulted in the recognition of a spectacular new species, as yet unnamed. This plant may prove to be Oregon's most beautiful, and endangered, mariposa lily.

Finally, the Department of Agriculture is currently preparing to submit its first list of species to be approved for designation as Threatened or Endangered under state law. These sixteen species, listed below, are being recommended (after consultation with technical advisors, the Oregon Natural Heritage Program, and others) based on evidence of threats throughout their geographic ranges. Open meetings will be scheduled later this fall, in different regions of the state, to discuss the merits of these proposals. Written testimony concerning any or all of these proposed listings may also be submitted, and may very well be important in the final outcome (send to: Administrator).



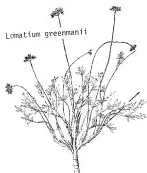
Astragalus appegatitii



Mentzelia packardiae



Lomatium bradshawii



Plagiobothrys hirtus
ssp. hirtus



Sidalcea nelsoniana



Lilium occidentale



Luina serpentina



Pleuropogon oregonus

Plant Division, Oregon Department of Agriculture, 635 Capitol Street NE, SALEM, OR 97310-0110. Final listing determinations will be made by the Director of Agriculture, after public input. The sixteen species under consideration are:

Lomatium bradshawii
Erigeron decumbens
Abronia umbellata ssp. breviflora
Pleuropogon oregonus
Plagiobothrys hirtus
Calochortus umquensis
Lomatium greenmanii
Luina serpentina

Sidalcea nelsoniana
Lilium occidentale
Lomatium cookii
Astragalus asplenifolius
Amelanchier alnifolia
Haplopappus radiatus
Mentzelia packardii
Thelypodium howellii
ssp. spectabilis

A number of additional species are being reviewed for listing, and we anticipate proposing another group for protection sometime next year. If you are interested in receiving a list of the species currently under consideration (i.e., the candidate list for the state), please write to Bob Meinke, Endangered Species Coordinator, at the above address. You might also indicate if you are interested in proposing species for addition to (or deletion from) the candidate list, or, if you wish to formally propose to the Department of Agriculture a species for listing or delisting. We will send you some information on how you can go about this. I'd also like to hear from individuals or chapters with interest in starting volunteer monitoring of rare plant populations in their area -- the regular gathering of information from the same sites over time can be very valuable to programs such as ours and the Oregon Natural Heritage Data Base in Portland. I'm looking forward to co-sponsoring the upcoming rare plant conference in Eugene, and will be happy to discuss any aspect of the endangered species program.

Bob Meinke
Oregon State Department of Agriculture

MYSTERIOUS MOENCHIA
by Peter Zika, Emerald Chapter

For such a little plant this invader gets a large amount of press. Since Frank Lang and Rhoda Love are tracking the adventures of *Moenchia erecta*, I'd like to respond to their requests to report any invasions. Here are about 30 of them.

Mildred Thiele introduced me to *Moenchia* at the Roseburg Rod and Gun Club, in a wet meadow with *Linnanthus douglasii*. Mildred helped write The Flora Survey of Douglas County, published by the Douglas County Museum of History and Natural History in 1986. It lists six *Moenchia* sites in Douglas County. In addition, Mildred and I found *Moenchia* with *Microcala quadrangularis* and *Briza minor* at the north end of the Sutherlin airport in 1987.

Last year I realized *Moenchia* is not so mysterious, it is merely small and overlooked. I've seen quite a bit of it on I-5, between Roseburg and Albany, when the camas blooms. Damp ground with *Ceanothus* is also good habitat for *Moenchia*, in the short vegetation just off the edge of the pavement.

In Lane County, *Moenchia* is an occasional weed in meadows. I've seen it this year in grasslands along Danaho, V lith, W lsch, Amazon Parkway, Helpline and Alton Baker Park in Eugene. It's scattered on undeveloped lots in Springfield as well. At Fern Ridge Reservoir, *Moenchia* inhabits wet Willamette Valley prairie in the newly established Fern Ridge Research Natural Area. There it grows with distinguished company: *Lomatium bradshawii*, *Erigeron decumbens*, *Microcala quadrangularis*, and *Aster curtus*. It is also present in the unplowed *Deschampsia cespitosa* prairie along the Long Tom River canal, about two miles south of Fern Ridge dam.

Moenchia erecta is becoming widespread now in the Umpqua basin and the upper Willamette Valley. It is likely to be found as far north as Portland or Vancouver, if someone goes looking for it. It is easiest to find on damp ground in the spring, among low grasses in meadows or on roadsides.

Mystery Solved

Since last spring, Dave Wagner has been receiving many requests for information about NPSO and gardening with native plants. Since he has not been president of our Society for several years, the source of this flood of mail posed an intriguing question. Thanks to C. A. Konold and Cynthia Purdy, I found out that the April, 1988 issue of *Family Circle* contained an article "Wildflowers for your garden" that listed NPSO and Dr. Wagner as a source of more information. Also, Eva Muliadi wrote that we were listed in an ORTHO® book *Landscaping with Wildflowers and Native Plants*. Perhaps we should request equal space in something like *Organic Gardening*.

I wonder who I will be forwarding mail to next year.
- D. L.

PLANT PUZZLE

Can you name this plant? The first person to give the correct scientific name will win a prize. The leaf illustration is from a shrub growing wild in Oregon. The bar shows a one cm scale.

Send your guess on a postcard to:

Peter Zika, Emerald Chapter
28681 Peoria Rd.
Halsey, OR 97348



Welcome New Members

Emerald Chapter

Robert D. Clark
Mount Pisgah Arboretum
Patricia Patterson

Portland Chapter

Manuel J. Boyes
Carolyn Eckel
Jean B. Foster
Jerry Fugate
Lorelei Norvell
Joanne & Russ Ramsey
Leslie D. Strubel

Siskiyou Chapter

Cynthia Lord
Laurie Montero
Naomi Neyerlin

Willamette Valley Chapter

Elvin (Cy) & Persis Eberhart
Kathy Schutt Staver
George Thatchar

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Corvallis Dennis Eare
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Bulletin of the

NATIVE PLANT SOCIETY of OREGON

To increase the knowledge of members and public in identification
and conservation of the native plants of the Pacific Northwest

Volume 21 No. 11

November 1988

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CHAPTER NEWS

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine, so proper dress and footwear are essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage, and terrain. Your participation is at your own risk. Bring water and lunch.

Blue Mountain

For information, contact Bruce Barnes (278-5547).

Corvallis

14 Nov., Mon.

Meeting. 7:30 pm at Rm. 4083 Cordley Hall, OSU, Corvallis. Ed Alvorsen of the OSU Botany Department will give a slide show and talk about his recent trip to China, entitled "A Botanical Excursion through China."

Emerald

14 Nov., Mon.

Meeting. 7:45 pm at Amazon Community Center, 2700 Hilliard St., Eugene. Program on Dwarf Grapefern of Oregon, by David Wagner.

12 Dec., Sun.

Meeting. 7:45 pm at Amazon Community Center, 2700 Hilliard St., Eugene. Holiday social and slide show. Bring a snack to share and ten or so of your slides.

High Desert

For information, contact Joyce Bork (389-5579).

Mid-Columbia

2 Nov., Wed.

Meeting. 7:30 pm at Pietro's Pizza Place, 3320 W 6th, The Dalles. Carolyn Wright and David Gross will relate their experience in the discovery of the previously presumed extinct Golden Buckwheat (*Eriogonum chrysops*). Come earlier, 6:30 pm, for a no-host pizza dinner.

North Coast

3 Nov., Thurs.

Meeting. 7 pm at State Office Building, 3600 3rd St., Tillamook.

20 Nov., Sun.

Field trip to Cape Lookout State Park for mushroom hunting. Meet at gazebo in day use area at 1 pm.

22 Nov., Tues.

Meeting with Nehalem Garden Club. 1:30 pm at Riversea Restaurant, Wheeler.

For information, contact Clarice Maxwell (842-7023).

Portland

8 Nov., Tues.

Meeting. 7 pm at First United Methodist Church, 1838 SW Jefferson St., Portland. Paula Brooks will give a program on "Wetland Habitats of Gifford Pinchot National Forest."

Siskiyou

10 Nov., Thurs.

Meeting. 7:30 pm at Rm. 171, Science Building, SOSOC. Program by Mark Prchal, Rogue River National Forest Geologist: "A Geological History of the Siskiyou."

Willamette Valley

21 Nov., Mon.

Meeting. 7:30 pm at First United Methodist Church, corner of SE Church and State Sts., Salem (use the Church St. entrance). Catherine MacDonald, Land Steward for The Nature Conservancy, will present "Natural Area Management: Flowers, Fire, and Fences."

Wm. Cusick

For information, contact Rachel Sines (963-0674).

HAS ANYONE SEEN HUMPED BLADDERWORT ?

by Peter Zika, Emerald Chapter

Utricularia gibba is an inconspicuous carnivorous aquatic plant. It was discovered in Oregon about 20 years ago by LaRae J. Dennis Johnston of OSU. She knows of two colonies in the Monroe region (Benton Co.), in the drainage of the Long Tom River, a tributary of the Willamette River.

A third colony of humped bladderwort was found this year near one of the headwaters of the Siuslaw River, in Horton Pond on Lake Creek (Lane Co.). It was growing with Potamogeton natans and Elodea nuttallii in less than three feet of water. Horton Pond was created by a dam, and was used as a log pond until 30 years ago. The rare Lycopodium inundatum (bog clubmoss) has colonized the peaty margins of some floating logs on the northern shore.

Can these really be the only three sites for U. gibba in Oregon? Waterfowl and boaters have the potential to spread it around between drainages, since it reproduces by fragmentation. It may be widespread and merely overlooked. I've never seen it flower in the west or the northeast. It tends to float just below the surface and imitate a small ball of fishing line. It remains identifiable through the summer and fall. If you've seen some, please contact me at:

PO Box 10226
Eugene, OR 97348

ROADSIDE "TEST PROJECT" PROPOSED FOR COLUMBIA GORGE FREEWAY

NPSO has long advocated a policy of beautifying and rehabilitating Columbia Gorge roadways with native plants. A short time ago, State Highway Engineer Don Forbes asked NPSO members to propose plants and test sites for native trees. In response, an area alongside Interstate 84 just east of Hood River was proposed to the Oregon Department of Transportation as a "test project" for rehabilitation with native plants. Located near Milepost 68 (westbound), this flat area of 3.5 or 4 acres is at this time almost completely barren rock and rock fill, the way it was left when this part of the freeway was constructed. The only consistent use of the area is for parking by sturgeon fishermen needing access to the natural rock shoreline at the east end of the area.

A preliminary landscape design suggested by NPSO uses native trees (Ponderosa Pine & Oregon White Oak), shrubs (Mock Orange, Serviceberry, Black Hawthorn, and Deer Brush), about 25 herbaceous perennials such as Balsamroot and lupines, and including the listed species Penstemon barrettiae, and native bunchgrasses. The goal is to restore the area as a pine-oak savanna similar to natural plant communities found in this part of the Gorge. NPSO has offered help throughout the project, with acquisition of plants and seed and with aftercare items such as weeding. At this point there has been no word from the Department of Transportation, but if they accept the proposal in principle, we will have our work cut out for us and need for a strong corps of volunteers.

-- Russ Jolley, Portland Chapter

UPDATE Provides Information Exchange on Endangered Species

Published by the School of Natural Resources at the University of Michigan, the Endangered Species UPDATE is a monthly bulletin providing recent news and information on endangered species topics. It includes a reprint of the latest Endangered Species Technical Bulletin (published by the U.S. Fish and Wildlife Service) along with complementary articles and information about species conservation efforts outside the federal program. Originally titled the Endangered Species Technical Bulletin Reprint, the UPDATE was developed in 1983 to distribute endangered species information to the public after budget cuts forced the U.S. Fish and Wildlife Service to limit its distribution of the bulletin to only federal and state agencies and official contacts of the Endangered Species Program. With the recent name change, UPDATE has expanded to include feature articles, book reviews, technical notes, and a bulletin board of upcoming meetings and announcements. To subscribe to the Endangered Species UPDATE, send \$15 (\$18 outside the United States) to Endangered Species UPDATE, School of Natural Resources, The University of Michigan, Ann Arbor, Michigan 48109-1115. Make checks payable to the University of Michigan.

WILL NATIONAL SCENIC AREA (FOREST SERVICE) DOCK ITS RESPONSIBILITY?

The Portland Chapter recently sent a letter to the Columbia River Gorge National Scenic Area (Forest Service) in Hood River, expressing our dismay at the destruction and disoloration of vegetation resulting from wholesale herbicide spraying carried out in the Gorge by the Union Pacific Railroad. The spraying also affected Forest Service and state lands outside the railroad right-of-way.

There is no doubt that the Forest Service was the proper recipient of our letter, since they are responsible for protecting the part of the Gorge where the spraying took place. Indeed, the interim guidelines developed by the Forest Service itself state that, "Proposed vegetation management projects...shall protect the scenic...or natural resources."

Nevertheless, shortly after the letter was sent, the Portland Chapter got a call from an NSA official who indicated that the Forest Service did not intend to pursue this matter or even make representations to the Union Pacific on behalf of the Native Plant Society. The excuse given for this policy of inaction was that railroad activities are considered to have been "grandfathered in" with passage of the National Scenic Area Act. So certain vegetation management projects are claimed by the Forest Service to be exempt from the guidelines, no matter how damaging they may be to the scenic and natural values of the Gorge. The official further recommended that, rather than expecting action or support from the Forest Service, we should complain directly to the Union Pacific Railroad.

We contend that all vegetation management projects should be subject to review, with a goal of minimizing damage to resources. Why can't the railroad be at least urged to cooperate. The problem cannot be avoided indefinitely; sooner or later it must be faced squarely. Will the Forest Service accept its responsibility?

-- Russ Jolley, Portland Chapter

SEARCHING FOR SÜKSDORF'S HATHORNS

by Rhoda Love

As some readers may remember, I have been interested in our western hathorns for a number of years. A few years ago, I wrote a short article for *HATHORN* describing hybridization between the native Douglas' hathorn (*Crataegus douglasii*) and the English hathorn (*C. monogyna*). My PhD thesis concerned insect feeding on native and introduced hathorns in the Willamette Valley.

During the course of my research, I had occasion to examine, at the Marion Oerby Herbarium at WSU in Pullman, the hathorn collection of the pioneer northwest botanist, Wilhelm Nikolaus Süksdorf (1850-1932). Süksdorf, who was born in Germany, lived for nearly 60 years in the Columbia River town of Bingen in Klickitat County, Washington. Süksdorf was apparently enormously interested in the genus *Crataegus* and collected many hundreds of sheets of native hathorns near Bingen. In 1907, Charles Sprague Sargent named a variety of Douglas' hathorn with 20 stamens, *Crataegus douglasii süksdorfii* in Süksdorf's honor.

For the past several years, in collaboration with Dr. Timothy A. Dickinson of the Royal Ontario Museum, Toronto, Canada, I have been continuing my field collection of hathorns -- both the 20-stamen *C. douglasii süksdorfii* and the 10-stamen *C. d. douglasii* -- providing material with which to test Dr. Dickinson's hypothesis that, in *Crataegus*, a reduction in stamen number from 20 to 10 is often related to an increase in ploidy and a tendency toward apomictic (asexual) reproduction. For this investigation, I have, during the past several seasons, collected hathorns in Lane, Douglas and Multnomah Counties, Oregon as well as in Skamania, Klickitat and Whitman Counties, Washington.

Throughout several field seasons, I have frequently been reminded of the material collected by Süksdorf which I saw in the Herbarium at Pullman, especially the many sheets each of 10-stamen material and of 20-stamen material which Süksdorf had collected in the 1880's and had labeled "Falcon Valley -- border of meadow" or "Falcon Valley -- on my farm." I found that, more and more, I longed to see this remarkable valley and farm where the two hathorn varieties apparently grow (or grew a hundred years ago) in close association with one another.

At this point, I'm sure the reader is thinking this is going to be an article describing the fantastic detective skills I employed to locate the Süksdorf farm. But not so, for that task was done in 1962 by William A. Weber in his WSU master's thesis, written under the direction of Marion Oerby, entitled "The Botanical Collections of Wilhelm N. Süksdorf 1850-1932." Mr. Weber did all future researchers interested in the work of Süksdorf a favor of inestimable proportions when he carefully tracked down the true locations of all Süksdorf's collecting places.

You see, Süksdorf must have been something of a romantic and he clearly loved the country between the Columbia River and the southern slopes of Mt. Adams north of Bingen. He collected heavily all over that part of Klickitat and Skamania Counties for the better part of 60 years, all the while giving his own colorful names to the places where he collected. These names -- and "Falcon Valley" was one -- have never appeared on any official map! (Many of Süksdorf's private place names were in German, as well.) However, by interviewing a number of Süksdorf's relatives who were still living in the early 1940's and by working out this rather eccentric botanist's private codes and abbreviations, Mr. Weber located all these places for later workers such as myself. But even with the help of this remarkable place of research, I am sorry to say that I still have not managed to set foot on the Süksdorf farm.

William Weber tells us in his thesis (page 118) that Süksdorf's "Falcon Valley" was "the fertile plateau near the southeastern base of Mt. Adams, in northwestern Klickitat County. It includes the towns of Rulda, Laurel, and Glenwood,

and is bounded on the northeast by the deep canyon of the Klickitat River. Saksdorf's farm was on the east half of the northeast quarter of section 12, near Pulda."

Armed with this information, Glen and I, on Sunday, August 28, having just waved goodbye to our daughter Jenny as she flew off for her second year of college in Ohio, jumped in our van and headed north to see the hawthorns of "Pulcon Valley."

We stopped at a hardware store in Ringo to purchase a map of Klickitat County and got our first surprise: Pulda has disappeared! Nevertheless we drove north up the White Salmon River to Troutlake, then east to Glenwood, then south again and convinced ourselves that Pulcon Valley is, on today's maps, "Canas Prairie," and that much of it lies within the Conboy Lake National Wildlife Refuge.

We found ourselves, by the way, in spectacular country. No wonder Saksdorf loved it! Mr. Adams from the south seems every bit as large and imposing as Mt. Rainier and the country, even at the end of August was lush and well-watered by many springs and creeks. And it was hawthorn! At a number of stops near Troutlake and Glenwood we were able to collect foliage from hawthorns growing in their favorite habitat: along the edges of pastures and near roadside ditches. (These were, of course, months past the flowering stage, so I could only estimate the stamen number from the fruit, however, most of the leaves we found looked like rather typical *C. d. saksdorfii* to me.)

Still, we had not found the farm. (Saksdorf lost his farm during World War I when the land returned to public ownership any land in that district not cultivated. Saksdorf used his farm to harvest the wild hay, and his petition to keep the land for this purpose was denied. Saksdorf seems to have been convinced that this happened because he was German at a time in history when Germans were unpopular in this country.)

At any rate, with Pulda no longer in existence, we could not be certain just which section 12 was the one referred to in the Weber thesis. We drove south of Glenwood along the eastern boundary of the Conboy Lake Refuge, but being then somewhat uncertain about the location of the vanished Pulda, we did not explore the dirt roads. I have since become convinced that the section 12 referred to must be that in Range 12 East, Township 5 North, outside the Conboy Lake Refuge and about 3 miles east of it. For those readers who know this part of Klickitat County, my calculations, if correct, would put the farm very close to the following features on my map: Dead Canyon, Kuhnhausen Spring, Fisher Hill Road and Canal Road.

So we did not actually reach the farm in August and it was not until I visited the University of Oregon map library and found an old map showing Pulda, that I was able to surmise that we were probably within 2 or 3 miles of the farm on the road from Glenwood to 82 Owner about 5 miles south of Glenwood.

And here is where I need your help. Can any reader familiar with Klickitat County and its history, or that of the Saksdorf family please let me know if my guess about the location of the farm is correct or incorrect? I hope to return to the area next May when the hawthorns are in bloom and try to locate some of Saksdorf's collecting sites. If you have information about the location or present ownership of the Saksdorf farm or the area, would you please write to me? I would very much like to hear from you. My address is 393 Pullvue Drive, Eugene, Oregon 97405. Phone: (503) 345-6241. Many thanks for your help.



Portland Field Trips

The Portland Chapter of NPSO completed its Field Trip Season for 1986 on October 29 with a trip for fall color led by our President, Esther Kennedy. In 1989 we plan to begin the season with February Workshops followed by weekly Field Trips starting in March as usual.

As Field Trip Chairman it has been particularly gratifying to secure the able assistance of so many qualified people. Several people led more than one trip and I hope the membership appreciates their efforts on our behalf.

Hopefully, this list is complete for all the leaders involved. Thanks go to the following: Russ Jolley, John Davis, Julie Kierstead, Jimmy Kagon, George Lewis, Keith Chamberlain, Jan and Dave Dobak, Louise Godfrey, Rick Brown, Elizabeth Handler, Shap Wilson, Barbara Fox, George Jeffcott, Herb Armentrout, Bryan Boyce, Ed Robertson (WNPS), Florence Ebeling, Carroll Dubuar, Charlene Holzwarth, and Vance Terrall.

-- Vance Terrall, Field Trip Chairman, Portland Chapter

PLANT PUZZLE

Sponsored by the Emerald Chapter

Can you name this plant? The first person to give the correct scientific name will win a prize. The leaf illustration is from a woody plant growing wild in Oregon.

Send your guess on a postcard to:

Peter Zika
PO Box 10226
Eugene, OR 97440



The October Plant Puzzle, *Physocarpus capitatus* (Pacific ninebark), was identified by Julie Kierstead of Portland. She wins a box of NPSO notecards, compliments of the Emerald Chapter.

Endangered Plant Conservation Managing for Diversity

Donald A. Falk and Linda R. McMahan

Editor's Note: The following article is an extension of the remarks by Donald Falk at the Annual Threatened and Endangered Species Conference held earlier this year. It is reprinted by permission of the author from the *Natural Areas Journal*, April 1988; Volume 8, Number 2.

Introduction: The past century is vivid evidence of the human tendency to "live as if tomorrow will never come." We are awakening from the pleasant dream of unlimited resources to find our wildlands disappearing along with the animals and plants inhabiting them. Only slowly are we making the necessary societal commitment to set aside natural areas and to learn how to manage them. At the species level the problem is no less formidable: about 3000 of the approximately 25,000 species, subspecies, or varieties of plants native to the United States are at risk of extinction in the wild. For an estimated 200 species, we are too late: they are already extinct. Other species survive in cultivation, but their native habitats are gone.

It is under these circumstances that botanic gardens find themselves becoming partners with those who conserve our natural heritage. Botanic gardens have many skills to lend to the effort including knowledge of plant propagation and growth, research facilities, and dedicated staff. Techniques such as cryogenic seed storage, tissue culture micropropagation, and isoenzyme analysis may seem like methods of the future, but such tools will be an essential part of the conservation repertoire if we are to ensure the survival of rare plants and plant communities in the United States. As conservationists, we believe that tomorrow really will come.

An overview of cooperation between onsite and offsite natural resource management is given in an earlier article in the *Natural Areas Journal*. This article provides specific examples of how botanic gardens are helping to conserve rare plants, especially through the auspices of the Center for Plant Conservation (CPC). The CPC's program is aimed at encouraging botanic gardens to develop cohesive conservation projects. The program is part of an overall goal of integrated conservation strategies, which incorporate site protection, habitat management, and offsite backup and research. We believe that such integrated strategies are ultimately the most effective approach to preventing extinction.

The Center for Plant Conservation: Founded in 1984, the CPC is the first private conservation organization in the world dedicated to offsite germplasm conservation of the nation's rare flora. Its network includes nineteen regional botanical gardens and arboreta, each with a strong commitment to plant conservation. The CPC's objective is to create offsite germplasm collections (collections of seeds, living plants, tissue culture, pollen, and other plant material containing genetic information) of rare and endangered native plants in each region of the United States, so that there will be at least one site where any endangered species can be safely grown to ensure survival. Methods include collection and propagation, seed storage, maintenance of living plants in cultivation, and research on reproduction and growth. Collections are designed to represent the genetic composition of the wild populations to the greatest extent feasible. The collections thus act as a resource for the future, specifically for research into the plants' reproduction and biology or for carefully planned reintroductions into

native habitats. Throughout the process the CPC works closely with other plant conservation professionals, both in identifying the highest priority taxa for offsite conservation and in developing strategy for offsite germplasm collection.

A basic part of the CPC's mission is to cooperate with agencies managing wild populations and their habitat. The old dichotomy of "in situ versus ex situ" is dissolving gradually as evidence accumulates that cooperative programs can be more successful than any single method applied alone. This trend toward integrated conservation strategies may represent one of the most significant developments in conservation methodology.

Current Cooperations in Endangered Species

Management: Following are examples of how botanic gardens and arboreta are carrying out plant conservation efforts in the United States today. Activities range from active management of natural areas to seeking information on conservation priorities. Many of the examples cited in this article predate the CPC or have proceeded independently of its efforts; no implication is made that all the cited projects are associated with CPC at the present time.

Management of Natural Areas: Botanical gardens often manage large tracts of land. It is not surprising, therefore, to learn that rare species have been identified on land owned by several botanical gardens. Other gardens have contracts to manage lands or species not under their direct control.

Bok Tower Gardens in central Florida discovered two rare species on their 12-ha (30-acre) nature preserve while conducting a survey in 1985. The extremely rare clasp-wax, *Waxes amplexifolia*, occurs in only a few other locations. Additionally, botanists found nearly twenty scrub plums, *Prunus geniculata*. Both species are found only in central Florida's scrub pine habitats. As part of the CPC's program, Bok Tower collected seeds from the natural populations and is maintaining cultivated populations. The CPC's scientific Advisory Council approved the plans for maintaining separate collections but cautioned against growing plants from other populations of either species at Bok Tower so as not to affect the genetics of the wild populations found close by. In addition to land owned directly, Bok Tower Gardens manages the nearby Tiger Creek Preserve for the Florida Field Office of The Nature Conservancy, which is habitat to several rare Florida species.

Another example is the Pacific Tropical Botanical Garden in Kauai, Hawaii, which owns several natural areas on Kauai and other islands. One area near Kona on the island of Hawaii is home to several rare plants, including *Kokia drynarioides*, *Nothocestrum breviflorum*, *Dracaena hawaiiensis*, and *Colubrina oppositifolia*.

The Denver Botanic Gardens manages three off-site properties, including the 8-ha (20-acre) Walter S. Reed site in the montane zone of Upper Bear Creek Canyon in the Front Range, the 65-ha (160-acre) Mt. Goliath Alpine Unit on the slopes of Mount Evans, and the 283-ha (700-acre) Chatfield Arboretum in Jefferson County, southwest of Denver. Together these three sites provide opportunities for field research and education, in addition to being significant natural areas in their own right.

Recommending Target Species: Developing a program involves establishment of priorities. Since the CPC's program has a national scope, it is important to determine clear criteria for selecting target projects in any given year. The CPC's approach has been to integrate existing national endangerment rankings with other data collected specifically for and by the center. The published listings of the U.S. Fish and Wildlife Service in the Federal Register are a basic source, as are the global ranks assigned by The Nature Conservancy. The question is how to select the most important plants for collection and research in any given year from this data set of more than 5100 listings. To aid answering this question, the CPC has been conducting a national survey of 120 regional botanists, asking them to identify species that may be facing extinction in ten years or less. More than 200 plants have been identified as this close to extinction; these taxa naturally will have the highest priority for the CPC program in the coming years.

Conservation Collections: Several examples in this article describe conservation efforts that could proceed only because plants had been collected previously and established in a permanent living collection (see the descriptions of projects for *Kokia* *cookei*, and *Arctostaphylos uva-ursi* var. *leoboeuensis*). For this reason, the establishment of offsite conservation collections is the primary focus of the CPC's efforts.

Conservation collections that provide some insurance against total extinction may now be found at botanic gardens in all parts of the United States. Extremely rare plants such as Peter's mountain mallow (*Ilamnia corei*), running buffalo clover (*Trifolium stoloniferum*), Texas snowbells (*Syrax texana*), Knowlton's cactus (*Pediocactus knowltonii*), Tennessee purple coneflower (*Echinacea tennesseensis*), Florida torreyia (*Torreya taxifolia*), and the blowout penstemon (*Penstemon haydenii*) are protected in permanent living collections or in seed banks. Such collections are most effective when they are maintained as part of a coordinated, comprehensive program such as that of the Center for Plant Conservation.

Endangered species can be maintained at botanic gardens or in seedbanks for long periods of time, although long-term maintenance can present formidable technical, scientific, and institutional difficulties. One of the basic roles of the Center for Plant Conservation is to encourage institutional commitment to conservation programs, along with providing technical and financial assistance.

The first instance of an American species saved from extinction through conservation collection was the Franklin tree, *Franklinia alabamica*. The tree was extirpated from its only known wild location in Georgia in the late nineteenth century but exists today in many cultivated collections. One such collection is at The Arnold Arboretum of Harvard University; the large shrubs in the collection are probably genetically close to those once occurring in the wild.

Several plants face imminent extinction in the wild with little or no hope of saving their natural habitats. In such cases offsite conservation collections may offer the only hope for perpetuation of many species. Conserved germplasm will be available for reestablishment into the wild if and when suitable circumstances develop. Following are examples of three Hawaiian conservation collections.

A single tree in a degraded habitat is all that remains of the palm, *Prithardiana murrai*. Although the plant produces seeds prolifically, both the seeds and seedlings are consumed by domestic and wild animals, preventing

seedling establishment. Seeds from this lone survivor have been collected and are being grown at the Waimea Arboretum and Botanical Garden.

Also grown at Waimea is a rare mallow, *Hibiscus brackenridgei* var. *mokuiaena*. Most wild plants in this taxon already have disappeared from known sites. The one remaining population is in such poor condition that Waimea's director, Keith Wolliams, estimates that it will only survive for one or two more years. Botanists are searching for additional populations but so far have been unsuccessful. Meanwhile, Waimea has collected propagules from the current site and already has material from another location, now extirpated.

Another plant grown at Waimea is *Cookei kokia*, *Kokia cookei*. This tree, now extinct in the wild, bears beautiful large red flowers. Before the tree became extinct in the wild, Waimea collected cuttings and established a cultivated population. Only seven trees remain of the species, all in cultivation at the arboretum.

Rescue and Mitigation: When efforts to save a population in the wild fail, salvage of the plants is sometimes still possible. Few biologists feel that salvage efforts are likely to conserve a species in the wild, since specific habitat requirements may be lacking in the sites to which they are moved. The shock of transplantation and establishment can further threaten the survival of individual plants. Nonetheless, where extremely rare species are concerned it is better to retain living plants if at all possible. Several recent examples of salvage and transplantation will show how the process works.

Barrett's penstemon, *Penstemon barrettii*, is a beautiful rare plant endemic to the Columbia River Gorge. One recently discovered population grew on a cliff near the Bonneville Dam. The Corps of Engineers (COE) had scheduled a new navigation lock before the plants were discovered, and no site alternative for the lock existed. Since the species is not listed under the U.S. Endangered Species Act, the COE was under no obligation to protect the site or the species. But the Corps of Engineers proposed that cuttings of the plants be taken for incorporation into garden beds on the dam property. The Berry Botanic Garden in Portland, Oregon, undertook the project, which was paid for by the COE and aided by volunteers. In May 1987 and March 1988 the plants (progeny by cuttings from the original population) were transplanted into the prepared beds. Additionally, plants were reestablished on one natural rock face that had been spared blasting. Backup cuttings and seeds also are maintained at the Berry Garden to help preserve the gene pool of this particular population. Another example is the Florida goldenaster, *Chrysopsis floridana*. In 1987 Bok Tower Gardens in central Florida collected seed of this species from a site that was slated for residential development. The parks departments for several nearby counties were interested in the species. Bok Tower Gardens supplied more than a thousand seedlings of this attractive species for planting into natural sites not far from the original site. The plants are being monitored to determine the success of the program.

The plant rescue project at the North Carolina Botanical Garden in Chapel Hill has been operating for more than sixteen years and is probably the most established garden-based rescue program in the country. Using staff and volunteers, the garden has rescued plants on dozens of sites scheduled for destruction. Garden collectors obtain the permission and cooperation of the landowner, often removing blocks of soil or sod for replanting. Rescue projects have included the white wick (*Kalmia cuneata*), least trillium (*Trillium pusillum*), and Oconee bells (*Shortia galatifolia*). One rescue of the latter species

involved relocation of more than 2500 plants to a protected site at the garden. Ironically, the population was threatened by expansion of a recreational hiking trail by a local utility.

In a similar case, Holden Arboretum in Mentor, Ohio, recently undertook the rescue of plants from a doomed population of the lake iris, *Iris lacustris*. The population was being destroyed by a highway-widening project of the state of Michigan, and all efforts to protect the population had failed. With the help of the Michigan Department of Natural Resources, the arboretum obtained bulbs to establish a permanent germplasm collection.

Reintroduction: Reintroduction, as defined in part one of this series, refers to returning a taxon to a habitat where it was once known to occur but from which it has been extirpated. One recent reintroduction for *Stephanomeria malheurensis* was described in the first article in this series.

The Center for Plant Conservation does not undertake reintroductions on its own but does provide material to natural resource agencies managing natural areas or restoring endangered plant species. Reintroduction to a documented site is unlikely to cause genetic contamination of wild populations if done correctly, although proper precautions need to be taken.

A striking example of the reintroduction of a species extinct in the wild is the work of Tilden Regional Botanical Garden in Berkeley, California, with *Arctostaphylos uva-ursi* var. *leubneri*. The only remaining population of this species, on San Bruno Mountain south of San Francisco, was destroyed by fire in the 1960's. Fortunately the garden had collected material from the site previously and maintained it in cultivation, thus preventing total extinction. In 1967 the garden began propagating plants for reintroduction near the original site, in cooperation with the state/county park in which the plants originally were found. The project will continue as a cooperative effort until the population is reestablished and requires only ongoing monitoring by the land managing agency.

Introductions Introductions into new habitats are undertaken when there are only a few extant populations or individuals left in the wild. Botanists use introductions to increase the chances of the species' survival in the wild. All such introductions must be considered experimental at present; until we have completed many years of monitoring, we cannot declare them successful.

An introduction into a new habitat recently was undertaken for Texas snowbells, *Syrax texana*. The project was proposed and funded by the U.S. Fish and Wildlife Service, and much of the work was carried out by the San Antonio Botanical Gardens. Texas snowbells are one of Texas' rarest plants. The shrub, bearing attractive bell-shaped white flowers each spring, is known from fewer than thirty individual plants in the wild, which grow along cliffs of spring-fed streams of the Texas hill country. The existing populations, all on private land, are out of reach of the native and exotic herbivores that threaten their survival. In 1986 and 1987 staff at the San Antonio Botanical Gardens collected seed from wild plants. Germination proved to be extremely successful, and twenty-five plants were introduced into each of two new sites in fall 1987. These new populations, introduced into sites where the species was not known to occur previously, are being monitored closely by a botanist. Survival was high in the first few months after transplantation, but monitoring will continue for many years. In related efforts the landowner of the largest natural population of Texas

snowbells recently agreed with The Nature Conservancy to allow fencing of the population to protect it from grazing herbivores.

An experimental introduction of the tiny endangered Knowlton's cactus, *Fedoa cactus knowltonii*, is showing marked success after two years. The species is now known from only one site in New Mexico, a location well-known to commercial and private collectors interested in the species. Since the land is under the management of The Nature Conservancy, the major threat at present is from collectors. In 1984 the U.S. Fish and Wildlife Service and the New Mexico Natural Resources Survey teamed up to introduce the cactus into a new location with geography, soils, and climate nearly identical to the known habitat. Cuttings were taken from plants at the known locality and rooted in small pots. Although the propagation was done under contract with a private nursery, techniques were similar to those employed by botanic gardens. After a season in the greenhouse the plants were transplanted into the new site in a grid pattern set up to facilitate monitoring of the new population. After two years, survival is over 90 percent, leading to guarded optimism about the survival of the introduced population. Botanists will continue to monitor the population for survival and seedling production.

Revegetation and Enhancement of Existing

Populations: In many cases a conservation strategy focuses on enhancement of a population that has been damaged, often by grazing or off-road-vehicle use. Plants in naturally unstable environments such as dunes or talus slopes may be particularly prone to disruption. In such cases material (seeds or cuttings) may be taken from the site, propagated, and replanted onsite to help reestablish the population.

A case in point is the restoration of a Vermont population of *Hudsonia tomentosa*, a state endangered species found on land owned by The Nature Conservancy (TNC). Off-road-vehicles had nearly destroyed the population when TNC arranged for propagation of cuttings taken from the remaining plants. The rooted cuttings later were transplanted back to the original location, helping to reestablish the population. Such efforts are especially reliable because the propagated material is genetically consistent with the site's genome. This is an important consideration in cases where there is genetic variability between populations. Whenever possible, revegetation projects should use material taken from the site itself.

Population enhancement often relies on research to guide project design. A particularly cogent example is presented by the Catalina mahogany (*Cercocarpus traskiae*). The Catalina mahogany is known from only seven plants confined to a single canyon on the southwest side of Santa Catalina Island off the coast of southern California. Once consisting of forty trees, the population declined through overgrazing and soil loss caused by large herds of sheep and feral pigs. Active management of the seven remaining individuals began with fencing of two trees in the late 1970's by the Santa Catalina Conservancy. More extensive fencing was added in 1985. In 1987 the Rancho Santa Ana Botanic Garden began working closely with the Santa Catalina Conservancy to perpetuate the species. Using isoenzyme studies, they determined that only five of the seven trees were truly *C. traskiae*. The other two were hybrids with the more common mountain mahogany, *C. betuloides* ssp. *blanchae*. The chemical study confirmed what biologists had suspected from examining the trees morphologically. Armed with this knowledge of the trees' parentage, the Santa Catalina Conservancy will reintroduce rooted cuttings of the five true trees to help

build back the population. If they had used cuttings from all seven trees, Roseberg believes that "Catalina mahogany might be lost . . . and that our management efforts might actually be speeding up the loss."

Enhancement projects also can involve transplanting common species to stabilize or revegetate a site, making it more hospitable for rare species. Such projects more correctly fall into the category of habitat restoration.

Restoration: The field of habitat restoration, or restoration ecology, is attaining increasing importance in plant protection efforts, for it is on a restored habitat that the survival of many rare species may depend. Restoration was recently the subject of a national conference and may represent one of the most synthetic conservation disciplines. Its original focus on severely degraded sites may find applications in endangered species preservation. For instance, a West Virginia site that had been destroyed by coal mining underwent a restoration that included establishment of the rare *Marshallia grandiflora*. Plants were collected, propagated in a greenhouse, and grown in a nursery to a size suitable for reintroduction.

Management Research: As important participants in integrated conservation strategies, botanic gardens have a responsibility to assist in the management and preservation of wild populations as well as maintain their own cultivated collections. One of the most useful contributions is to conduct rare plant research specifically designed to aid preserve managers.

An interesting current example involved the rare Peter's Mountain mallow (*Lilium coryi*), known from only one site with four plants in Giles County, Virginia. In cooperation with the Virginia Chapter of The Nature Conservancy, botanists at the Virginia Polytechnic Institute (Blacksburg, Virginia) and the North Carolina Botanic Garden (Chapel Hill, North Carolina) are studying seed germination, seedling establishment, flowering, and seed set in an effort to understand how the habitat should be managed to allow the population to regenerate naturally. The flowers presently abort before producing viable seed, indicating possible inbreeding sterility. In addition there are some indications that leaf litter at the site is inhibiting growth of the population, since there are substantial numbers of seeds in the duff layer that are not germinating.

The Plymouth gentian (*Sabazia kennedyana*) is another example being studied at the Garden in the Woods of the New England Wild Flower Society (Framingham, Massachusetts). The plant occurs naturally on pond edges in coastal Massachusetts, in what NEWFS propagator William Brumback describes as "alternating flood/bake conditions." Brumback found a way to germinate seeds in the garden and in so doing determined that the plant is monocarpic. This discovery has significant management implications because the soil seed bank therefore must constitute a large proportion of the species' total genome.

Management-related offsite research is being conducted on several other species such as *Lilium grayi* (North Carolina Botanic Garden), and *Aconitum noveboracense* (Cornell Plantations).

Basic Research: Botanic gardens and arboreta also conduct basic plant science research. Several United States gardens working with rare plants in the CPC's network are university-affiliated, including The Arnold Arboretum of Harvard University, the North Carolina Botanic Garden (University of North Carolina), the

Rancho Santa Ana Botanic Garden (Claremont Colleges), the Nebraska Statewide Arboretum (University of Nebraska), the University of California Botanic Garden (University of California, Berkeley), and the Utah Statewide Arboretum (University of Utah). Others, such as the Missouri Botanic Garden and the New York Botanic Garden, are independent but have a strong institutional tie to a university for teaching and research. And several gardens, notably the Fairchild Tropical Garden and the Pacific Tropical Botanical Garden, maintain research programs that are entirely internally managed. All of these have the potential to develop plant research programs that can significantly contribute to biologically sound conservation.

Research into the basic biology of rare plants includes studies in systematics, physiology, reproductive systems, and autecology, as well as horticulture. An excellent example is work carried out at The Arboretum at Flagstaff, Arizona, on mycorrhizal associations in several members of the genus *Pediocactus*. Arboretum staff have undertaken field collecting and propagation in cooperation with the regional office of the U.S. Fish and Wildlife Service, the state of New Mexico, The Nature Conservancy, and a private nursery. In 1985 the roots of Peeble's Navajo Cactus (*Pediocactus peeblesianus* var. *peeblesianus*) were observed to be heavily colonized by the fungus *Gliomus deserticola*. Since then the arboretum has been conducting cultivation studies to determine the fungal symbiont's effect on the cactus' germination and growth rate. This previously undocumented symbiosis thus may have both basic and applied research interest. Related research by Barbara Phillips at the Museum of Northern Arizona with *P. peeblesianus* var. *peeblesianus* has demonstrated that the species is an obligate outcrosser, a formerly unrecognized characteristic.

From a conservation perspective, however, the most promising - and vital - realm of research concerns the distribution of genetic variation in populations of rare plants. For example, in species that typically self-fertilize it has been shown that genetic differences between populations are characteristically greater than for outcrossing taxa. Such patterns of genetic variation have enormous implications for the design of representative offsite germplasm collections, since they have a direct bearing on the number of sites that should be sampled and the size of the collections to be made. The problem in designing such strategies for rare plants is that, at the present time, so little data are available regarding genetic variation in rare plants that it is nearly impossible to construct a biologically sound program.

To address this need the Center for Plant Conservation is undertaking a one-year study program in genetic variation in rare plant species, to be concluded by a conference on the subject in March 1989. The purpose of the conference will be to bring the current state of knowledge in population biology and genetics to bear on conservation strategy and to advance the level of understanding in the conservation community.

Economic Research: Of the more than 1000 genera represented in the CPC's data base, more than two-thirds are congeners of plants with current or near-term economic potential. This includes crop genera (*Trifolium*, *Amaranthus*, *Zizania*); fruits, seeds, and nuts (*Vaccinium*, *Helianthus*, *Prunus*); forest products (*Pinus*, *Abies*, *Picea*, *Betula*, *Quercus*); and industrial products and pharmaceuticals (*Lesquerella*, *Limonanthus*, *Astragalus*). There are also hundreds of endangered plants in horticulturally popular genera (*Iris*, *Lilium*, *Rosa*, *Rhododendron*, *Persea*, *Magnolia*, *Fremontodendron*, *Carpenteria*) and families (*Cactaceae*, *Celastraceae*). Botanic gardens can play a key role by providing

research-quality germplasm collections for screening programs.

In part to advance the systematic assessment of rare native plants for economic potential, the CPC has signed a cooperative agreement with the U.S. Department of Agriculture, National Plant Germplasm System (NPGS). Under this agreement the CPC and the NPGS will work jointly to store seeds of endangered native species and to develop material for USDA research in economic botany.

Conclusion: The conservation community is changing dramatically. Not only new institutions, but new kinds of institutions are becoming involved at a basic level. The entry of botanic gardens and arboreta into conservation in the mid-1980's has opened up new possibilities for cooperative projects in introduction, enhancement, restoration, and research into the dynamics of plant communities and endangerment.

Until recently such projects in botanical gardens were scattered, with no means to develop and apply consistent standards. As the Center for Plant Conservation and the botanical garden network gain experience in this area, they will become stronger allies in the fight against plant species extinction.

New Officers of Emerald Chapter

Officers of the Emerald Chapter, elected in August, are:

Diane English, President
Stephanie Schulz, Vice-president
Charlene Simpson, Secretary
Nadine Smith, Treasurer.

Indian Heaven Field Trip Report

Carroll Dubuar and Elizabeth Handler led the field trip on September 10 to the Placid Lake area in Indian Heaven, southeast of Mt. St. Helens. Approximately 21 of us enjoyed the delightful fall hike through woods and meadows, and past numerous lakes.

The peak of the flower season had definitely passed, but we were not too disappointed since it had coincided with the peak of the mosquito season. Most notably we saw Mock azalea (*Menziesia ferruginea*), White rhododendron (*Rhododendron albiflorum*), and seeds of Pipsissewa (*Chimaphila umbellata*) and heather, but the plentiful and ripe huckleberries proved to be the most popular plant to inspect.

The Placid Lake Loop is described in Don and Roberta Lowe's *33 Hiking Trails - Southern Washington Cascades*, but we discovered that a section of trail had been completely relocated near the end of the loop. Since there are many interconnecting and unsigned trails, hikers would be well advised to check their maps and compasses carefully or go with an experienced guide.

-- Roxy Rochat, Portland Chapter

Our Gift to Youth

I look at the barren hillsides,
that were forest covered land
and walk the river channel,
that is now just drifting sand.
I wonder if man's vision,
has all gone out to sea.
It would be nice if some were saved,
just for you and me.

-- Jesse T. Martin, Willamette Valley Chapter



Cornus canadensis
Drawing by Julie Kierstead

IMPORTANT ADDRESS

Robert Mainke
Endangered Species Office
Plant Division
Dept. of Agriculture
635 Capitol Street NE
Salem, Oregon 97310-0110
378-6458

Letters v. Phone Calls?

Is it better to write a letter or will a phone call suffice?

ONRC's experience has shown both to be equally effective. Ideally, you will do both. But some are too busy for (or agonize over) writing letters. For

those who prefer the next best thing to writing, action is just a phone call away. You can call a local Oregon office (some have toll-free 800 numbers) or can call Washington, D.C. Calling during off-peak hours (usually before 8 a.m., but you should check with your long-distance carrier to be sure) is attractively cheap—especially if you hate writing letters.

When you call, ask to talk to the legislative aide who handles natural resources issues. If they aren't there you may request that they return your call, or you may leave a simple message, stating your desires (see above). All phone calls are carefully logged and summarized for the boss.

(You can also ask directly for the office-holder, expecting to be fended off to the aide. Be careful though, some have been put through immediately, so be prepared!)

If you write a letter, please keep it to one page and legible (typed is preferred). A postcard is better than nothing. While you may receive a computer-generated form response, rest assured that a real human read yours and all other letters and summarized them for the boss.



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 Membership in the Native Plant Society of Oregon is open to all.
 Membership applications, renewals, and changes of address
 (including old address and zip code) should be sent to the
 Membership Chair.

BULLETIN

Editor Jim Dotson
 2524 NW Sawyer St., Portland, OR 97210, 248-3242
 The NPSO Bulletin is published monthly. Copy to use for the 1988
 or the 1989 should be sent to the editor. News, articles,
 photos, or drawings, and non-copyrighted material are welcome.

GUIDELINES FOR CONTRIBUTORS

The Bulletin is not a journal; therefore typed, camera-ready copy is most appreciated. But no submission will be accepted because it is not typed. Please proofread & check facts.

LENGTH: 10th of each month

FORMAT: Copy should be typed in 4th inch wide columns, of any length. Author's name & chapter affiliation (or other organization) are typed at the end of the article. There is no standard paragraph treatment; one of these is suggested:

- * for long articles, double space between paragraphs, but do not indent the first word of the paragraph
 - * for short articles or short paragraphs, when double spacing looks odd, indent the first word of the paragraph instead
- Type your own headlines, centered, all caps. In case of special formats, e.g. plant keys, you are free to choose the layout.

CREDITS: For each submission, provide

- * title
- * author—specify whether byline is desired for new items
- * instructions as to whether item is to be used in entirety or excerpted at editor's discretion

* sources & date if item is not original
ILLUSTRATIONS: black & white prints, ink drawings, woodcuts, halftones, et al. We welcome small drawings as well as larger efforts. Please give source & date, if not original.

SCIENTIFIC NAMES: should follow Hitchcock & Maguire's *Flora of the Pacific Northwest* where possible. Use of both scientific & common names is encouraged. Genus & species names are underlined or italicized.
RETURN OF ORIGINALS: Manuscripts & illustrations will not be returned unless it is requested.

The Bulletin is published as a service to NPSO members & the public. Your suggestions & comments are always welcome.

NATIVE PLANT SOCIETY OF OREGON MEMBERSHIP FORM

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Name _____

Is this a change of address?

If so, please write your Old Address: _____

Address _____

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 Rare and Endangered Plant Fund \$

* All contributions to the Native Plant Society of Oregon, a non-profit organization, are tax deductible.

Send completed form and full remittance to: Mary Falconer, NPSO Membership Chair, 1920 Engel Avenue NW, Salem, Oregon 97304. Please make checks for dues and contributions payable to NATIVE PLANT SOCIETY OF OREGON.

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Bulletin of the

NATIVE PLANT SOCIETY of OREGON

To increase the knowledge of members and public in identification and conservation of the native plants of the Pacific Northwest

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CHAPTER NEWS

IMPORTANT NOTE TO FIELD TRIP PARTICIPANTS

Field trips will take place rain or shine, so proper dress and footwear are essential. Trips may be strenuous and/or hazardous. Please contact the trip leader for information about difficulty, mileage, and terrain. Your participation is at your own risk. Bring water and lunch.

Blue Mountain

For information, contact Bruce Barnes (276-5547).

Corvallis

10 Dec., Sat.

Annual dessert potluck. 7:30 pm at Dan Luoma's house, 2912 NW Arthur Av., Corvallis (758-8063). Bring a dessert to share and ten favorite slides to show.

Emerald

12 Dec., Mon.

Meeting. 7:45 pm at Amazon Community Center, 2700 Hillyard St., Eugene. Holiday social and slide show. Bring a snack to share and ten or so of your slides.

High Desert

For information, contact Joyce Bork (389-5579).

Mid-Columbia

7 Dec., Wed.

Meeting. 7:30 pm at Mosier School. Bruce Meyers will present a program on *Penstemons*, rescheduled from an earlier month.

4 Jan., Wed.

Meeting. 7:30 pm at Mosier School. Doug Daoust, silviculturist with the Mt. Hood National Forest, will relate the beargrass commercial foraging issue to us with proposal for monitoring future activity.

North Coast

1 Dec., Thurs.

Meeting. 7 pm at State Office Building, 3600 3rd St., Tillamook.

For information, contact Clarice Maxwell (842-7023).

Portland

13 Dec., Tues.

Meeting. 7 pm at First United Methodist Church, 1838 SW Jefferson St., Portland. Variety slide show -- members should bring up to 15 slides to show.

18 Feb., Sat.

Potluck dinner at Leach Botanical Garden. Mark your calendar now; more details later.

Siskiyou

8 Dec., Thurs.

Meeting. 7:30 pm at Rm. 171, Science Building, SOSC. Slide and lecture presentation on "Ecological Effects of Fire" by Dr. Paul Lemon, adjunct professor of biology at SOSC.

Willamette Valley

No meeting in December. For information, contact Pat Rogers-Rochna (769-4669).

Wm. Cusick

For information, contact Rachel Sines (963-0674).

NPSO Annual Meeting Announced

Mid-Columbia Chapter will host the 1989 NPSO Annual Meeting Friday, May 5 through Sunday, May 7, 1989. Mark your calendars now; there will be more details in forthcoming *Bulletins*. It still should be prime wildflower time in the Gorge!

State Board Meeting - January 28

The next NPSO State Board meeting will be on January 28 at 10am in the PGE Room of the Salem Public Library. More information will be in the January *Bulletin*, including a map. Send agenda items to Dan Lucena.

Portland Spring Flower Show

Portland Chapter will host its annual Wildflower Show at the World Forestry Center on May 20 and 21, 1989.

Honey Bee Foraging Plants - Which Ones Are They?

The Nectar and Pollen Plants Committee of the Oregon State Beekeepers Association has asked for comments and observations by NPSO members on plants that are particularly attractive to honey bees. Decreasing habitat and food sources for many pollinators is causing a decline in their numbers. One way to offset this decline is to plant nectar and pollen producing flora.

Also, there are two publications currently being prepared. One is a revision of a 1942 bulletin on nectar and pollen plants of Oregon. This should be available in early 1989. The other is a cross reference of Soil Conservation Service recommendations for conservation and forage plantings with nectar and pollen producing plants in Oregon. This one should be available now.

To comment on plants used by bees or for information on these publications contact the Nectar and Pollen Plants Committee, Oregon Beekeepers Association, 19919 Summit Street, Blodgett, Ore. 97326.

NOMINATING COMMITTEE SEARCH FOR CANDIDATES

It is that time of year when NPSO must locate candidates willing to serve on the State Board of Directors. Candidates are being sought for the position of President, Vice President, Secretary, and three Directors at Large positions. The duties of each position can be found in "A Summary of Leadership Positions" included in this issue of the *Bulletin*.

Please discuss these positions at your chapter meetings. Chapter Presidents should send the names of those members who are interested in serving in any of the positions listed above to the Nominating Committee Chair by December 15. Interested persons can also contact the nominating committee directly if they desire.

NPSO is a viable and effective force in the State of Oregon. The 1987 Endangered Species legislation is just one example of the many accomplishments of NPSO that have had a significant impact on our native flora. The results of your labors can be most rewarding. Please seriously consider serving the Society in 1989.

Members of the nominating committee are listed below. Remember the committee should be contacted with the names of people willing to serve on the Board of Directors by December 15.

Russ Holmes, Nominating Chair
322 Arcadia Drive
Roseburg, OR 97470
672 4635 (home)
672 4491 (office)

Carolyn Wright
467 2218

Stephanie Shultz
485 1868



Soliciting New T-shirt Designs

Emerald Chapter is running very low on T-shirts, but before we order more, new plant designs are being sought. If you are interested in submitting a design, please send a 8.5 x 11 inch black and white drawing in ink, as soon as possible, to Nadine Smith, 1128 Jackson, Eugene, OR 97402.

WHAT IS THE GOVERNING BODY OF THE NATIVE PLANT
SOCIETY OF OREGON?

Composition

Elected Positions

Four statewide officers: President, Vice-President,
Secretary, and Treasurer.

Immediate Past President

Six Directors-at-Large

Presidents of all affiliated local chapters

Appointed Positions

State Conservation Chair

State Legislative Chair

State Membership Chair

R/E Chair

Bulletin Editor

Description of Duties for Elected Positions

President

Presides at Board Meetings which are held three times a year, and any other general membership meeting as may be called for. This includes gathering and organizing agenda items. Acts as spokesperson for the Society. Handles various telephoning and correspondence according to need. Current President estimates time spent in an average month on Society business to be approximately eight hours. Serves one-year term.

Vice-President

Presides at meetings in the President's absence, and performs additional functions as required. Minimal telephoning and correspondence. Current Vice-President estimates less than two hours per month average spent on Society business. Serves one year.

Secretary

Keeps minutes during all meetings of the Board and any statewide membership meetings. Also prepares other directives, documents, or correspondence as are needed and authorized by the Board or President. Current Secretary states she spends about eight hours after each Board Meeting organizing the minutes in report form for the next meeting and in brief summary for the next issue of the Bulletin. Serves one-year term.

Treasurer

Maintains accounts of the Society's transactions. Makes deposits as well as disburses funds as ordered by the Board. Remits portion of membership dues to local chapter treasurers. Makes periodic maintenance payments to the Bulletin. Accepts and records funds from the Poster and Notecard promotions. Arranges for audits as required for State charitable tax status and for the annual Statewide Meeting. Prepares reports for each Board Meeting. Current Treasurer estimates her time commitment about two to three hours each month for each Board Meeting. Current Treasurer estimates her time commitment to be two to three hours each month with slight increase around the annual Statewide Meeting. Serves one-year term.

Board Members - Directors-at-Large

Attend Board Meetings; provide input, vote on issues of concern. Three new directors are elected every year to serve two year terms. Travel and attendance at board meetings require about three days time per year.

It should be emphasized that the amount of time spent in any officer capacity is most dependent upon the individual's own interest level and time frames rather than any rigid structure or formal expectations.

Nomination and Election Timeline

Nominating Committee members canvas their local memberships for willing candidates prior to December 1st. Preliminary slate of candidates presented in January Bulletin. Amended slate of candidates (include additional candidates as well as brief capsule resume of each candidate) presented in February Bulletin.

Official voting ballot goes to the membership in the March Bulletin. Votes to be returned by April 1st and counted by Ballot Committee. New officers installed at the annual Statewide Meeting.



**BRADSHAW'S LOMATIUM BECOMES A FEDERAL
ENDANGERED SPECIES**

by Peter Zika, Emerald Chapter

Bradshaw's lomatium (*Lomatium bradshawii*) is a Willamette Valley endemic. It grows in bottomland prairie dominated by tufted hairgrass (*Deschampsia cespitosa*). More than 99 percent of this wet grassland community has been destroyed in the last 150 years, and the once common lomatium is now on the brink of extinction. For a number of years botanists in the NPSO and The Nature Conservancy have been expressing their concern over the fate of lomatium.

After considerable study, the U. S. Fish and Wildlife Service officially declared Bradshaw's lomatium is a federal endangered species. The announcement was published in the Federal Register on September 30, 1988. It is expected that the Oregon Dept. of Agriculture will follow suit shortly, and declare Bradshaw's lomatium a state endangered species. The federal Endangered Species Act protects listed plants on U. S. government lands, and on lands affected by federal funds, but does not specifically protect plants on private property.

Prairies with Bradshaw's lomatium also harbor a number of other rare species, including Curtus' aster (*Aster curtus*), and the endemic Willamette Valley daisy (*Erigeron decumbens*). Protection of lomatium habitat will favor these species as well.

The U. S. Fish and Wildlife Service should put together a "recovery plan" soon, designed to preserve and enlarge the remaining lomatium populations, and establish sound land management practices for its habitats.

NEW NAMES FOR AN OREGON *Senecio*
by Peter Zika, Emerald Chapter

Tucked away in the journal of the New England Botanical Club is an article describing two new varieties of *Senecio streptanthifolius* Greene from Oregon. Bain (1988) includes a key, photographs, descriptions, range maps, and taxonomic information for seven varieties of Rocky Mountain butterweed, also called cleft-leaved groundsel.

Senecio streptanthifolius var. *wallowensis* J. F. Bain.

Oregon stations are in Wallowa Co., in the Eagle Cap Wilderness of the Wallowa-Whitman National Forest: Ice Lake, the Matterhorn, Jewett Lake, Pete's Peak [Point], and a Cusick collection from "steep mountain sides of Imnaha River." The holotype (Bain 199 ALTA) is from Ice Lake. The variety is also cited from Mount Rainier NP in Washington, and Mt. Rose, Washoe Co. in Nevada.

S. streptanthifolius var. *laetiflorus* (Greene) J. F. Bain.

Oregon locations are in Crook Co., Grant Co., Harney Co., Klamath Co., Lake Co., and Malheur Co. This variety ranges into California and also Nevada.

For a reprint you can write to:

John F. Bain
Dept. of Plant Science
MacDonald College
Ste. Anne De Bellevue
Quebec, Canada
H9X 1C0

Citation

Bain, J. F. 1988. Taxonomy of *Senecio streptanthifolius* Greene. *Rhodora* 90: 277-312.



**GIVE NPSO
A HOLIDAY GIFT!**

**CONTRIBUTE TO THE
LEIGHTON HO FUND**

**SEND CHECKS TO:
DAPHNE STONE, TREAS.
1934 CLEVELAND ST.
EUGENE, OR 97405**

HAPPY HOLIDAYS !

Washington Plant Lists Available

Washington Native Plant Society has available plant lists from all over the state of Washington. They are available for only a copying fee and postage. Some of the lists are very local, while others cover larger areas. Most deal with just natives, but some include exotics.

The 4 page index to the lists costs 25 cents. Individual lists cost 5 cents per page. Contact Sarah Cooke, 3911 First Ave., N.E., Seattle, WA 98105; include a stamped, self-addressed envelope.

Discover the Local Flora: A Course Designed with NPSO in Mind

Increasing membership is important to gain popular and financial support for the ideals of NPSO and to broaden the educational reach of our programs and field trips. Speakers and trips are always interesting but people have to know about them. During 1987-88 Emerald Chapter began to increase the visibility of local NPSO activities. Advanced notification of programs and trips in newsletters of all local environmental organizations, newspapers, and Parks & Recreation schedules and posters on boards in college science departments, museums, community centers, YMCA, and libraries were important. During 1987 membership increased by 10 people and attendance at programs numbered between 30 and 50. Of some concern was the high attendance on field trips and the impact so many botanists might have on the environment.

This past spring a new activity was added to introduce people to NPSO and other local "botanical opportunities". I designed a one credit course, "Discover the Local Flora". This was offered through the Science Dept. at Lane Community College and organized around Emerald Chapter activities. For example, class meetings were on the same evenings as our Chapter meetings and all Emerald Chapter field trips and workshops were included in the course. Additional activities such as an Herbarium tour, Arboretum hike, flower identification sessions, and a lecture on endangered species rounded out the course. In all the course offered 14 botanical activities of approximately 3 hours' duration and the students had to attend 10. The course attracted individuals, most of whom were first time botany enthusiasts. The class was designed for them as well as students concurrently enrolled in a more technical botany class and for those who had taken a botany course and wanted to continue or expand their study of the local flora. At the end of the course the students completed a questionnaire about their experience in the course. Field trips were the overwhelming favorite; students stated that they would join NPSO to keep informed about the trips. All students were exposed to new botanical activities that they would not have explored on their own.

The course does take some time and energy to organize but it is easy and fun once it gets going. The majority of the course is attending activities led by a guest speaker, not the instructor. I had two class meetings at the beginning of the quarter and one at the end. I would add one mid-quarter although the students were content with the way I had organized the meetings and liked the varied format.

If you would like to organize a similar program for your chapter, I would be happy to provide my course syllabus and more detailed information to anyone who is interested. Please note my new address below. The staff at LCC and Emerald Chapter members contributed greatly to the success of the course.

Gail Baker, Emerald Chapter
P.O. Box 1515, Duval, WA 98018-1515
(206) 883-0052

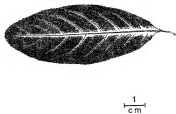
PLANT PUZZLE

Sponsored by the Emerald Chapter

Can you name this plant? The first person to give the correct scientific name will win a prize. The leaf illustration is from a woody plant growing wild in Oregon.

Send your guess on a postcard to:

Peter Zika
28681 Peoria Rd.
Halsey, OR 97348



The November Plant Puzzle, *Umbellularia californica* (California laurel, or myrtle) was identified by Veva Stansell of Gold Beach. She wins a box of NPSO notecards, compliments of the Emerald Chapter.

**GIVE NPSO
A HOLIDAY GIFT !**

**CONTRIBUTE TO THE
J. DAVIS SCHOLARSHIP**

**SEND CHECKS TO:
MARY FALCONER
1920 ENGEL CT. NW
SALEM, OR 97304**

SEASON'S GREETINGS !

James Mills and Jochen Kummerow are faculty members at San Diego State University.

ROOT PARASITISM IN INDIAN PAINTBRUSH

by James N. Mills and Jochen Kummerow

A springtime walk through the chaparral rewards the adventurous hiker with an astonishing display of forms and colors. The landscape in the Southern California mountains is dominated by the blue flowers of white-bark lilac (*Ceanothus leucodermis*) and white-flowered cupleaf lilac (*C. greggii*). Against this background a small shrub with bright scarlet flower spikes stands out. Crimson-tipped floral bracts contrast with gray-green foliage to make Indian paintbrush (*Castilleja foliolosa*) one of the most striking and attractive plants in the chaparral throughout the state.

Gazing at this colorful beauty the student of biology might recall that the Indian paintbrush is a partial parasite. But how can such a beautiful shrub lead such a free-loading lifestyle?

Parasitism in Vascular Plants

Parasitic vascular plants are generally divided into two broad groups. Those that lack chlorophyll and depend on the host for all of their water, mineral, and nutritional requirements are often called holoparasites. Holoparasites are obligate parasites; they cannot survive and reproduce in the absence of a suitable host plant. Familiar examples are dodder (*Cuscuta*) and broomrape (*Orobanchae*). Many plants, however, are only partial parasites. They depend on their hosts for only part of their metabolic requirements or during only part of their life cycles. A partial parasite (also called a hemiparasite) usually contains chlorophyll and may be an obligate or a facultative parasite (which can complete its life cycle without a host).

In many instances the relationship between parasite and host is obvious. The climbing stems of dodder and the debilitating and deforming brooms of the mistletoes (*Arceuthobium* and *Phoradendron*) are common examples of parasitism that have been recognized since the days of Theophrastus (about 300 B.C.). The ordinary appearance of some parasites, however, gives no clue to their dependent habits.

The Parasitic *Castillejas*

Parasitism is not unusual in the Scrophulariaceae, or figwort family, to which the Indian paintbrush belongs. Members of this family illustrate the entire array of parasites, from complete parasites to those that show no outward signs of parasitism but resemble self-supporting plants with green leaves. Below ground, however, they all make parasitic connections with the roots of various host plants. These connections are made by finger-like projections of parasite tissue called haustoria that penetrate the host and transfer substances to the parasite.

The genus *Castilleja*, consisting of facultative parasites, is widespread in western North America; about thirty-four species are native to California. Although studies by Heckard (1962) have shown that some *Castilleja* species are capable of surviving and reproducing in the greenhouse without a host, plants grown in this fashion are much less vigorous than those grown with hosts. These are the kinds of situations that bring the terms obligate and facultative into question. Should *Castilleja* be considered an obligate parasite because it is not known to occur without a host in its natural environment? Or is it a facultative parasite because it can be grown in the laboratory without a host?

The association between parasitic plants such as *Castilleja* and their hosts is finely tuned and highly integrated. Seedling establishment and haustorial bridge formation are important early events in the life cycles of parasitic plants, which have necessarily evolved fast and efficient methods for locating and attaching to suitable host tissue.

Although most hemiparasites, including *Castilleja*, lack specific germination requirements, others will germinate only in the presence of host roots, in response, apparently, to some yet unidentified root exudate of the host plant. The host-recognition response of *Castilleja* begins after germination in the young seedling root tips. At this stage a host root exudate may be the important stimulus for haustorial formation.

Baird and Riopel (1985) successfully induced haustorial initiation in *C. coccinea* using host roots or haustoria-inducing chemicals and made detailed observations of the initial haustorial formation. The first indication of haustorial formation is a lateral enlargement of root cells near the root apex. Around the base of this "haustorial mound" appear many short haustorial hairs. The haustorial hairs are single-celled structures that elongate from epidermal cells of the growing haustoria. Haustorial hairs were only recently shown to be distinct from ordinary root hairs. Unlike the latter, which have a smooth, homogeneous surface, haustorial hairs have an outer coating of globular material that forms a sticky sheet when the hairs contact host roots or other structures. Thus haustorial hairs appear to attach the haustorium to the host root. Although initiation of the haustorium may require the presence of a host root or root exudate, attachment of the haustorium apparently is non-discriminatory. Haustorial hairs will readily attach to artificial substrates in the laboratory, and plants in the field have been excavated with haustoria attached to rocks, pipes, and even other roots of the same plant. As one might guess, *Castilleja* does not appear to be host-specific.

As the growing haustorium presses against the host root tissue, a peg-shaped structure called the endophyte develops from the haustorial tissue at the host surface, penetrates the host, and forms a connection with the host's vascular system. At its tip is a series of large, elongate, finger-like cells called digitate cells, with a high capacity for enzymatic activity. These cells are the first to invade host tissue. A single digitate cell may intrude between two host cells and then divide and expand, crushing host cells in the process. Their action probably involves a combination of physical paring and enzymatic digestion. After penetrating the host water-conducting tissue (xylem), the digitate cell will become a conductive element called a vessel member. Meanwhile, haustorial cells will already have formed a vascular core of vessel members that will conduct water and dissolved minerals to the main body of the parasite.

The association described here seems to allow only for the transfer of water and minerals. In fact, it has generally been believed that, while non-green parasites depend on the host for photosynthetic products as well as water and minerals, green parasites rely on the host only for water and minerals. The evidence for this is ambiguous. The haustoria of root parasites only rarely contain phloem, the typical vascular food-conducting tissue in plants. However, haustoria of the parasitic Scrophulariaceae consistently possess a certain cell type, the function of which is not completely understood. These cells were discovered near the turn of the century and were named phloetracheids in reference to their presumed dual function as water- and food-conducting elements. It has also

been speculated that materials being transported in host phloem might be transferred to adjacent digitate cells of the parasite and eventually to the parasite's main root.

Sternitz and Harris (1987) recently discovered that *Castilleja* takes up secondary plant compounds such as alkaloids from the host plant. This phenomenon is of special interest because secondary plant compounds may be used as poisonous or repulsive defenses against plant-eating insects.

Effects on the Host Plant

The effect of *Castilleja* on the host plant has not been adequately studied. This effect has been assumed to be negligible when water is abundant. Certainly it is to the parasite's advantage not to kill the host, or even to greatly decrease its vigor. However, parasitism does no damage only in the case where the host has more than it can use of whatever the parasite takes. Such luxury uptake probably occurs in some plants at certain times of the year or during certain periods of the plant's life cycle, but not all of the time. Thus, parasitism is likely to decrease the host's growth and vigor in most cases. The few experiments that have been done indicate that parasitism results in lower biomass of host plants as compared to non-parasitized controls.

Chaparral natives such as chamise (*Adenostoma fasciculatum*) and California buckwheat (*Eriogonum fasciculatum*) are frequently parasitized by *Castilleja foliolosa*. Chaparral plants are growth-limited during much of the year by drought and by poor soil nutrient (especially nitrogen) capacity. The extraction of water and nitrogen from chaparral shrub roots by *Castilleja* undoubtedly has a negative effect on these shrubs. Shrubs that are prone to being parasitized would be at a competitive disadvantage in this resource-limited community. Parasitism by the Indian paintbrush is a frequently overlooked factor that might be considered along with fire, drought, temperature, competition, nutrient stress, and herbivory by plant ecologists attempting to explain the dynamics of chaparral plant communities.

References

- Baird, W.V. and J.L. Riopel. 1985. Surface characteristics of root and haustorial hairs of parasitic Scrophulariaceae. *Bot. Gaz.* 146:63-69.
- Heckard, L.R. 1962. Root parasitism in *Castilleja*. *Bot. Gaz.* 124:21-29.
- Sternitz, F.R. and G.H. Harris. 1987. Transfer of pyrrolizidine and quinolizidine alkaloids to *Castilleja* (Scrophulariaceae) hemiparasites from composite and legume host plants. *J. Chem. Ecol.* in press.

Hylocomium splendens : A Useful Moss

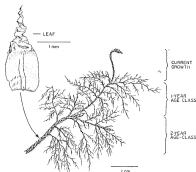
Now that most of the wildflowers have set fruit and the forest floor is damp, mushrooms, lichens and moss catch our eye. Forest hikers are probably familiar with the staircase-like growth form of the feather moss, *Hylocomium splendens*. Each segment represents an annual growth increment. It is one of the few mosses in which yearly growth can be so easily distinguished. This characteristic, along with the fact that mosses in general are directly responsive to rainfall, make it a useful tool for pollutant monitoring.

Because moss does not have roots, nutrient and water acquisition take place on the plant's surface. These organisms, therefore, have evolved very efficient absorption abilities. Pollutants deposited by rainfall and mist are quickly incorporated into the tissue. When the annual segments of *H. splendens* are analyzed for heavy metals or other compounds, information can be gained about the pattern of pollutant deposition; how much accumulates over the years and how it is released into the soil as the moss decays.

Mosses are known to be among the first organisms to disappear from polluted areas because they are highly sensitive to pollutants. Most studies simply record that certain moss species are no longer present in an area. The growth form of *H. splendens* allows researchers to monitor its yearly growth and be alert to signs of inhibited growth or reduced vigor. Such an early warning sign could help avoid loss of *H. splendens* and other moss species.

Why is the loss or degradation of our moss flora important? There is increasing evidence that bryophytes play a significant role in the energy and nutrient cycling in some ecosystems (boreal forest, tundra and rain forest) and that they can influence the water retention capacity of an entire watershed. Mosses represent a large, perennial surface area in an ecosystem. A study of the epiphytes in a stand of big leaf maple (*Acer macrophyllum*) in the Hoh Rain Forest in Washington showed that the epiphytic biomass was approximately four-fold greater than the biomass of the leaves in the trees. The epiphytes also enhanced nutrient retention and uptake. The moss carpet you observe on the forest floor may have a parallel function.

Gail Baker, Emerald Chapter



Hylocomium splendens

Welcome New Members

Corvallis Chapter

George & Dorothy Burt

Emerald Chapter

Maxine Berg
Stella Dean
Charles & Reida Kimmel
Henry Morrison
Cathy Ross
Ethel H. Sieussy
Mr. & Mrs. Orville Steward
David Struyin

High Desert

Deanne Earnshaw
Brenda Eberle
Kathy Lloyd
Ruth Paul

Mid-Columbia Chapter

Lynette Miller

North Coast Chapter

Lee & Anita Townsend

Portland Chapter

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Joe Cosenza
Dr. David Dalton
Connie Davis
Nancy Forman
Mrs. Nelson Glover
Mary Hewitt
JoAnn Klassen
Cynthia Konold
Bethany McMichol
Glen & Betty McNutt
Joyce Mitchell
John Whisler
Steve Wright

Siskiyou Chapter

Richard Brock

Willamette Valley Chapter

Theodore Stohr, Jr.

Wm. Cusick

John Ball

Arctic Coastal Plain Threatened

The Alaska Coalition of Oregon has been organized to help save the Arctic Coastal Plain in the Arctic National Wildlife Refuge from oil and gas exploration and development. There are proposals to designate the 1.5 million acres of the refuge's coastal plain as wilderness, thereby protecting the important area from oil development. There are other proposals that would allow leasing of this land for oil and gas development. For more information contact the Alaska Coalition of Oregon, P.O. Box 42262, Portland, Ore. 97242 (503-233-7456).

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LEGISLATIVE.....	Esther McEvoy..... 3290 Willamette, Corvallis, OR 97333; 754-0893
MEMBERSHIP.....	Mary Falconer..... 1920 Engel Ave. NW, Salem, OR 97304; 585-9419
WILDFLOWER POSTERS & PINS.....	Susan Kofahl..... P. O. Box 151, Mosier, OR 97225; 292-0415
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WM. CUSICK (LaGrande area).....	Rachel Sines..... 504 C Ave., LaGrande, OR 97850; 963-0674

BULLETIN

EDITOR.....	Jan Dobak..... 2584 NW Xavier St., Portland, OR 97210; 248-9242
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GUIDELINES FOR CONTRIBUTORS

The *Bulletin* is not typeset; therefore typed, camera-ready copy is much appreciated. But no submission will be rejected because it is not typed. Please proofread a sheet twice.

LENGTH: 10th of each month.
FORMAT: Copy should be typed in 10th wide columns, of any length. Author's name & chapter affiliation (for other organizations) are typed at the end of the article. There is no standard paragraph treatment; one of these is suggested:

- * for long articles, double space between paragraphs, but do not indent the first word of the paragraph

- * for short articles or short paragraphs, when double spacing looks odd, indent the first word of the paragraph (standard type your own handles, centered, all caps. In case of special format, e.g. plant keys, you are free to choose the layout).

COVER: For each submission, provide

- * title
- * author—specify whether byline is desired for name items
- * instructions as to whether item is to be used in entirety or excerpted in editor's discretion
- * source & date if item is not original

ILLUSTRATIONS: Black & white prints, ink drawings, woodcuts, halftones, et al. We welcome small drawings as well as larger efforts. Please give source & date, if not original.

SCIENTIFIC NAMES: should follow Hitchcock & Maguire's *PLANS* of the Pacific Northwest, where possible. Use of both scientific & common names is encouraged. Genus & species names are underlined or italicized.

RETURN OF ORIGINALS: Manuscripts & illustrations will not be returned unless it is requested.

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Chapter (if known) _____

Name _____

Address _____

City _____ State _____ Zip _____

Phone (Home) _____ (Work) _____

Is this a change of address?

If so, please write your *Old Address* here: _____

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() Regular..... 10.00 () Patron..... 100.00
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* **CONTRIBUTIONS:** Jean Davis Memorial Award Fund..... \$ _____
Rare and Endangered Plant Fund..... \$ _____

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Mary Falconer, NPSO Membership Chair, 1920 Engel Avenue NW, Salem, Oregon 97304.

Native Plant Society of Oregon
2584 N.W. Savier Street
Portland, Oregon 97210-2412



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